



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

A 382874



THE
LONDON
MEDICAL GAZETTE,

OR
Journal of Practical Medicine.

NEW SERIES.

VOL. V.

LONDON:
PRINTED FOR
LONGMAN, BROWN, GREEN, AND LONGMANS,
PATERNOSTER ROW.

1847.

012 314 442

A 382 874

LONDON :

PRINTED BY WILSON AND OGILVY,

57, Skinner Street, Snowhill.



medical
series
Lectures.
7-24-39
38537

LECTURES

ON THE

DISEASES OF INFANCY AND
CHILDHOOD,

Delivered at the Middlesex Hospital,

By CHARLES WEST, M.D.

Physician-Accoucheur to, and Lecturer on Mid-
wifery at, the Middlesex Hospital, and Senior
Physician to the Royal Infirmary for Children.

LECTURE V.

*Inflammatory affections of the brain—fre-
quent in childhood, but overlooked by
early writers—first noticed about a cen-
tury ago—described under the name of
acute hydrocephalus, by Dr. Whytt.*

*Progress of knowledge with reference to
acute hydrocephalus. — The name re-
stricted in these lectures to serofulous
inflammation of the brain, which is much
more frequent than its simple inflamma-
tion in childhood.*

*Morbid appearances in acute hydrocephalus
—due either to inflammation or to tuber-
cular deposit—alterations more apparent
in the membranes at the base of the
brain than in those at its convexity.—
Reasons for considering granulations of
the membranes as tubercular.—Increase
of fluid in the ventricles almost in-
variable.—Central softening of the brain
—not a post-mortem alteration — fre-
quently connected with changes in the
lining of the ventricles.*

Symptoms of the three stages of the disease.

*GENTLEMEN, — Few of the diseases of
childhood are more serious than those in-
flammatory affections of the brain on the
examination of which we are now about to
enter. They occasion more than 10 per
cent. of all deaths under five years of age
in this metropolis, while they are so
especially the diseases of early life, that
81.3 per cent. of all cases of fatal inflam-
mation of the brain occurred in children
under five years of age, 90.5 per cent.
before the age of 10, and 92.6 per cent.
before the age of 15.**

But, though the frequency of these affec-
tions in the young is a matter of such popu-
lar notoriety, that most of you were familiar
with the fact long before you engaged in
your present profession; yet if you turn to
the writings of any of the old physicians

you will find in them no mention of inflam-
mation of the brain in childhood. At first
this may surprise you, but a few moments'
consideration will explain the seeming over-
sight. Convulsions, which form a promi-
nent symptom in most cases of inflamma-
tion of the brain, occur, as I need not re-
mind you, in the course of many other
affections of the nervous system. An acci-
dent so alarming as a fit of convulsions is
sure to attract attention, but much careful
observation is often needed to distinguish
those minor differences between the symp-
toms that precede or accompany it, that
alone would indicate the cause to which it
is due. It cannot then be surprising, that
in the absence of this minute care, many
diseases, though differing in most important
particulars, should have long been classed
together under the head of convulsions, and
that inflammation of the brain should not
have been recognised as a distinct affection.
The importance of some of those less obvious
structural changes which we know to be
most significant of the nature of previous
disease was not then understood, so that an
alteration in the consistence of the brain, or
a diminution in the transparency of its
membranes, often passed unnoticed: and
anatomical research was not exact enough
to make up for the deficiencies in clinical
observation.

But, just as the physician's attention was
fixed on the convulsive seizures which in so
many cases afflicted his patients, so the eye
of the anatomist was often arrested by the
discovery of a large quantity of fluid in the
interior of the brain. Sometimes this fluid
had been secreted in such quantity as not
only to distend the ventricles of the brain,
but to occasion a manifest enlargement of
the skull. In such cases the disease was
essentially chronic in its course, and was
called, from its most striking characters,
dropsy of the brain, or chronic hydro-
cephalus.

Speculation, however, was set afloat by
the occasional notice of cases in which,
though fluid was found in large quantity
within the brain, yet the previous disease had
been of short duration, its symptoms had been
acute, and the fever, drowsiness, and cere-
bral disturbance which attended it, had run
a very rapid course to their fatal termina-
tion. Dr. Whytt was the first* who, in
the year 1768, clearly pointed out the con-
nexion between these symptoms and the
accumulation of fluid in the ventricles. His
attention, like that of previous observers,
was mainly fixed on this point, to the exclu-
sion of other morbid appearances, and he
was thus led to regard the disease as an

* Deduced from 5th Report of Registrar-
General, p. 206—208.

* In his Observations on the Dropsy in the
Brain, 8vo. Edin. 1768.

acute dropsy of the brain. Little can even now be added to his description¹ of the malady, but further observation has shown that the presence of an increased quantity of fluid in the brain, on which he laid so much stress, is not of invariable occurrence; that there is no certain relation between the amount of the fluid and the intensity of the symptoms or the rapidity of their course, and that it is almost always associated with other very important lesions, some of which are the evident results of inflammatory action. Many years were occupied in the investigations which led to this conclusion, and long before Whytt's theory had been ascertained to be erroneous, people had grown familiar with the name which he proposed for the disease, and in this country it is still called hydrocephalus, or acute hydrocephalus.

A most important step towards a knowledge of the true pathology of this disease was the discovery that the fluid poured out into the ventricles is not a mere dropsical effusion, but that it is the result of previous inflammatory action. A difficulty, however, appeared, when it was ascertained that in those cases in which the signs of inflammation of the brain were most evident during life, and its effects most marked after death, both the symptoms and the morbid appearances differed in some respects from those usually observed in Whytt's disease. The almost invariable existence of a very obvious tendency to scrofula in well-marked instances of Whytt's disease, and its frequent absence in other cases of inflammation of the brain, did much towards solving this difficulty. It was next discovered that in nearly every instance in which Whytt's disease terminates fatally, tubercle is present in greater or less abundance in various organs of the body; and to the acuteness of French anatomists we owe the last step in this investigation, by which it has been shewn that in the majority of cases the membranes of the brain themselves are the seat of tubercular deposit.

We are thus led to the conclusion that inflammation of the brain occurs in early life under two different conditions. It now and then comes on in previously healthy children, but occurs much oftener in connexion with the tuberculous cachexia, or as the result of tubercular deposit in the brain or its membranes. The term encephalitis may be properly used to denote the cases of simple inflammation of the brain, while we may with advantage restrict the term acute hydrocephalus to cases of cerebral inflammation in scrofulous subjects. Owing to the extreme rarity of the former affection, it will, I think, be our better plan first to study minutely all the characters of acute hydrocephalus, and then to examine the

points of difference between simple and scrofulous inflammation of the brain.

We will commence this investigation with an inquiry into the nature of the appearances found after death in cases where acute hydrocephalus has a fatal termination. These may be divided into two classes, according as they are the result of inflammation or of the deposit of tubercle; and changes due to both of these causes are often found in the membranes of the brain as well as in its substance.

The appearances which present themselves on the skull being opened are seldom very striking, for the dura mater is usually healthy, and the changes in the arachnoid are not in general of a kind at once to attract attention. Sometimes, indeed, the eye is struck by an excessive vascularity of the membranes, but this appearance often depends on the overfilling of the large vessels as the result of position. Attentive examination will usually enable us to distinguish between this, and that increase of vascularity which is produced by a uniform injection of the minuter vessels; and moderate pressure, while it causes the disappearance of the apparent vascularity in the former case, will produce no effect on the true congestion in the latter.

The secretion that naturally moistens the sac of the arachnoid is altered, increased, or suppressed, but the last of these changes is the most frequent, while the first is seldom observed in cases of hydrocephalus. The preternatural dryness of the membrane is usually connected with some diminution of its natural transparency; it looks dull and lustreless, and feels sticky, a state to which the French have applied the term "*poisseux*." The dulness of the arachnoid is sometimes more considerable, and it then presents an opaline appearance, which is very evident at those parts where the membrane passes from one convolution to another. This opalescence is not often general, but is usually most marked about the upper part of the hemispheres, and in the neighbourhood of the longitudinal fissure.

When any considerable degree of vascularity of the membranes is evident, this is, of course, chiefly due to the injection of the minute vessels of the pia mater. Such intense injection of the pia mater is, however, far less frequent than the effusion of fluid between it and the arachnoid, and it is still less common to find the two appearances in the same subject. The effused fluid is for the most part colourless and transparent, and if present in any considerable quantity, the surface of the convolutions then appears as if covered by a layer of transparent jelly, though on puncturing the membrane a drop of clear serum will exude. The effusion of lymph or pus into the pia mater covering

any considerable extent of the convexity of the brain, is very seldom met with, but deposits of a yellow puriform lymph are not unfrequently seen occupying the depressions between the convolutions, or following the course of the vessels along the sides of the hemispheres, or at their upper surface, towards the convexity of the hemispheres.

But though the alterations presented by the membranes at the convexity of the brain are often comparatively trivial, the membranes at the base of the organ almost always show unequivocal traces of inflammatory action. The predominance of the affection of the membranes at the base of the brain has indeed been regarded by some writers as pathognomonic of scrofulous inflammation of the organ;* and though this rule is not without exception, still it holds good in the vast majority of cases. In 25 out of 29 fatal cases of acute hydrocephalus, in which I carefully recorded the condition of the membranes, those at the base of the brain were found to be the seat of disease more or less extensive, and always more considerable than that which existed at the vertex. In one of the cases in which the membranes at the base were healthy, there was a good deal of serous effusion beneath the arachnoid at the convexity; and in another instance there was some fluid in the sac of the arachnoid, and the pia mater, covering the upper surface of the brain, was greatly injected; but in the two remaining cases the membranes at the upper as well as those at the lower part of the brain were perfectly healthy.

The least considerable of the morbid changes in the membranes at the base of the brain consists in a milky or opaline condition of the arachnoid and pia mater, but chiefly of the former, sometimes extending over the whole lower surface of the cerebrum, but seldom being equally apparent in that part of the membrane which invests the cerebellum. But, besides this opacity, we usually observe much more distinct evidence of inflammatory action in the effusion of yellow lymph beneath the arachnoid. This is generally found about the olfactory nerves, which are often completely imbedded in it, while a similar effusion extending across the longitudinal fissure unites the two hemispheres of the brain together. A deposit of the same kind likewise reaches up the fissure of Sylvius in many cases, and connects the anterior and middle lobes of the brain with each other; or if poured out in less abundance, it may be seen running up in narrow

yellow lines by the side of the vessels as they pass from the base of the brain towards its convexity. It is in the neighbourhood of the pons varolii, however, and about the optic nerves, that the most remarkable alterations are met with. The opacity of the arachnoid is here particularly evident, while the subjacent pia mater is opaque, much thickened, and often infiltrated with a peculiar semi-transparent gelatinous matter, sometimes of a dirty yellowish-green colour. This matter is sometimes so abundant as perfectly to conceal the third and fourth nerves, and at the same time to invest the optic nerves with a coating two or three lines in thickness; though on being dissected off, the substance of the nerves beneath appears quite healthy. When this morbid condition exists in any very considerable degree it extends beyond the pons, and involves the membranes covering the medulla oblongata, especially at its anterior surface.

It is only within the past 16 or 17 years that attention has been drawn to the importance of another element, besides mere inflammation, in the production of acute hydrocephalus. The peculiar granular appearance which various parts of the membranes of the brain often present in this disease, though noticed many years before, began then to engage the special attention of several French physicians.* The conclusion to which we are led by their careful investigation of the subject is, that this appearance is not due to inflammation, as was once supposed, but that it is occasioned by the presence of minute tubercular deposits. These deposits often assume the form of minute, flattened, spherical bodies of the size of a small pin's head, or smaller, and either of a yellowish colour, and rather friable under pressure, or greyish, semi-transparent, and resistant, almost exactly resembling the grey granulations which are sometimes seen in the lungs or pleurae of phthisical subjects. They are likewise sometimes met with in what would seem to be an earlier stage, when they appear like small opaque spots of a dead white colour, much smaller than a pin's head, and communicating no perceptible roughness to the membrane. This appearance is often observed in the arachnoid covering the cerebellum, and those parts of the base of the brain where the arachnoid is stretched across from one part of the organ to another. The flattened yellowish bodies are most frequently seen at the convexity of the brain, and on either side of the hemispheres. They

* On which subject the valuable essay of M. Rillet, *De l'inflammation franche des méninges chez les enfants*; in the *Archives de Médecine*, for Dec. Jan. and Feb. 1846-7, may be consulted with advantage.

* M. Papavoine appears to have been the first who, in the *Journal Hebdomadaire*, for 1830, Vol. vi. p. 113, clearly established the tubercular nature of these granulations of the membranes of the brain.

generally follow the course of the vessels that ramify in the pia mater, and accordingly occupy the sulci between the convolutions, much oftener than their summit. The firm grey bodies are mostly seen about the pons, or imbedded in the pia mater in the neighbourhood of the optic nerves, or projecting from the surface of the membranes that cover the medulla oblongata. They are also often deposited in the arachnoid lining the occipital bone, and are then sometimes collected in considerable numbers around the *foramen magnum*. These bodies, sometimes of a grey, at other times of a yellow colour, are likewise met with, though less frequently, in the substance of the *velum interpositum*, or imbedded in the choroid plexuses, and in both of these situations they are sometimes very abundant.

These bodies, however, do not always retain the appearance of distinct granules, but sometimes on separating two folds of the arachnoid which had seemed to be glued together by an effusion of yellow lymph or concrete pus, we find that the matter which formed these adhesions is not homogeneous, but that it consists of an aggregation of minute granular bodies connected together by the lymph or pus in which they are imbedded. This appearance is often met with at the convexity of the brain, and close to the longitudinal fissure, and rather more towards its posterior than its anterior part; a strip of this yellow matter, half an inch long by two or three lines broad, connecting together the two hemispheres of the brain or the two surfaces of the arachnoid. Sometimes two or three deposits of this kind are observed at the convex surface of the brain, but they are generally more extensive at the base of the organ, where they occupy the longitudinal fissure and the fissure of Sylvius, and frequently connect opposite surfaces of the brain so closely together as to render their separation impossible without injury to its substance.

But you may ask me for the proof of these granular bodies being, as I have represented them to be, real tubercular deposits. It would occupy nearly the whole of this lecture to detail all the arguments that have been adduced on both sides of this question, for it is a question which has been much disputed; some persons being disposed to regard them merely as products of inflammation.

The reasons, which appear to me to be conclusive, in favour of the tubercular nature of their bodies, are—

1st. That they are always associated with tubercle elsewhere.

2d. That their abundance is not in proportion to the amount of inflammatory mischief.

3d. That they are sometimes met with in

cases where no head symptoms were observed during life, and unconnected with any sign of inflammation discovered after death; and,

4th. That their chemical composition and their microscopic structure are identical with those of tubercle in other organs of the body.*

Notwithstanding the important nature of the changes presented by the membranes of the brain in cases of acute hydrocephalus, it was long before they attracted as much attention as the alterations in the substance of the brain itself, and especially as that distension of its cavities with fluid from which the malady has derived its name. The surface of the brain, indeed, generally presents but few traces of disease, though sometimes the convolutions are greatly flattened, and the sulci between them almost obliterated by the pressure of the fluid from within. The cerebral substance is often healthy as low down as the centre of Visusens, or presents no change more important than the presence of an unusual number of bloody points, the divided cerebral vessels. But, though unaltered to the eye, a diminution of consistence is often perceptible as the ventricles are approached. Sometimes the whole brain feels softer than natural, while at other times, though not actually softened, it is infiltrated with fluid, as though it had soaked up the serum from the ventricles.

The presence of a larger quantity of fluid than natural in the lateral ventricles is of almost constant occurrence. In 28 out of 30 cases in which death had taken place under the symptoms of acute hydrocephalus, I found an appreciable quantity of fluid in the ventricles; and in 26 of these cases the quantity was considerable, amounting to several ounces. The fluid is in general a perfectly transparent serum, resembling passive effusions poured out from other serous membranes, and such it doubtless is in many cases in which it is found distending the lateral ventricles. But, in a large proportion of instances of hydrocephalus, the increased secretion in the ventricles is associated with a very notable change in the surrounding cerebral substance. This change consists in the loss of the natural firmness of the central parts of the brain, that varies in degree from a slight diminution of consistence to a state of perfect diffidence, in which the parts become completely disorganised, and form a pulpy mass that is easily washed away by a stream of water; or the softening may be even

* With reference to these two points see Béquere, *Recherches Cliniques sur la Méningite des Enfants*. 8vo. Paris, 1838, p. 20; and Lebert, *Physiologie Pathologique*, &c. 8vo. Paris, 1845, vol. i. p. 440—449.

more considerable, and the cerebral matter may become semifluid, and may closely resemble thick cream. The parts thus affected are perfectly pale and bloodless, and the cerebral substance in the neighbourhood is usually rather anæmic. The fornix, septum lucidum, corpus callosum, and posterior horn of the lateral ventricles, are the parts most frequently affected; the optic thalami, corpora striata, and lower parts of the middle and posterior lobes of the brain, rank next in this respect, while the anterior lobes are but seldom softened. In a few instances the cerebellum is involved in the softening, and now and then the whole brain is found to have lost much of its natural firmness,—a change, however, which is usually much more marked on one side than the other. Closely allied to this softening is the state to which I have already referred, wherein the whole brain appears perfectly infiltrated with serum, as though it had been long soaked in it, and had imbibed it like a sponge.

A mechanical explanation has been frequently suggested to account both for this appearance and for the central softening of the brain, which you will observe is most marked in those very parts to which the fluid in the ventricles would naturally gravitate after death. Many facts, however, are opposed to this view of the cause of softening of the brain. If it were a change induced by the imbibition of fluid after death, we should expect to find it as constant as is hypostatic congestion of the lungs; but instead of this being the case, fluid is found in many instances in the ventricles without the consistence of the brain being in the least diminished. In a recent work on *Acute Hydrocephalus*, which embodies the results of a very large number of dissections, it is stated that central softening of the brain existed only in 47 out of 71 instances, in which the ventricles contained a quantity of serum, varying from 3 to 11 ounces.* In my record of the examination of the brain in 28 cases of fatal hydrocephalus, I have preserved an accurate account of the condition of the cerebral substance, and find that in 12 instances there was not the least central softening, although the ventricles contained fluid in every case but one, and the quantity amounted on seven occasions to several ounces. M. Louis, too, mentions in his work on *Phthisis*†, that in 75 out of 101 tubercular subjects, each ventricle contained a quantity of fluid, varying from half an ounce to two or three ounces, but yet in only 6 of these 101 cases were the central

parts of the brain at all softened. And, not to dwell on any other arguments which might be adduced, it may be added that M. Rokitsansky has subjected the supposed hygroscopic property of the brain to the test of experiment, and found that no change whatever was produced in slices of cerebral matter by soaking them for hours in serum.

But if we reject the theory of this change in the brain being a mere post-mortem occurrence, the question still remains, to what is it due? M. Rokitsansky regards it as a condition of acute oedema of the brain, often, though not invariably, associated with inflammation, since its products—pus, and exudation corpuscles—are usually found in the broken down or infiltrated nervous matter.

One very strong proof of the close connexion that subsists between softening of the brain and an inflammatory process going on in the organ is furnished by the changes which in many of these cases may be observed in the lining membrane of the ventricles. In 14 cases of acute hydrocephalus, in which central softening of the brain co-existed with the presence of fluid in the ventricles, accurate notes were taken of the condition of their lining, and in three instances only was it found to be healthy. In one of these three cases the central softening was very inconsiderable, and in the other two cases the softening of the central parts was associated with very marked softening of other parts of the brain, which were altered in colour as well as in consistence. The lining of the ventricles in the remaining 11 cases was notably altered, although the degree of its change was very variable. The first alteration that takes place in it is the loss of its transparency, which is often, though not always, associated with a turgid state of its vessels. It next acquires an unnatural toughness, so that it can be raised by the point of the scalpel; and sometimes it is not merely opaque and tough, but greatly thickened, forming a dense firm membrane: and once or twice I have noticed its inner surface present a slightly granular appearance. These changes in the membrane do not bear any certain relation either to the quantity of fluid or to the degree of central softening, though it is rare to find an extreme degree of change in the lining of the ventricles without a considerable quantity of fluid in their cavity, and great softening of the brain around them.*

* *Beobachtungen und Bemerkungen über den rasch verlaufenden Wasserkopf.* Von K. Herich. 8vo. Regensburg, 1847, p. 161, § 126.

† *Recherches sur la Phthisie*, 2 ed. 8vo. Paris, 1843, p. 160, § 161.

* The subjoined note contains an analysis of my dissections of 30 cases of acute hydrocephalus, as far as respects the presence of fluid in the ventricles, the state of their lining membrane, and the condition of the cerebral substance; particulars the mutual relation of which to each other have not yet been fully investigated.

In 13 of these 30 cases there is no express

It happens sometimes that we find large patches of tubercular matter deposited beneath the membranes on the convex surface of the brain, and extending to the depth of about a line into its tissue in children who have died of acute hydrocephalus. Now and then, also, masses of tubercle, of a spheroidal shape, and of various sizes, are found imbedded in the cerebral substance. This latter appearance, however, is not frequent; it existed only in three out of the thirty cases on which I have founded my remarks on the morbid anatomy of acute hydrocephalus, and even in these cases peculiar symptoms existed which during the

mention of the condition of the lining of the ventricles.

In 2 the state of the cerebral substance is only imperfectly described.

In 28 the condition of the cerebral substance was carefully noted, and in 12 of these cases the brain was not softened at its centre.

In 1 of these 12 cases the

ventricles contained no fluid.

" 1	"	"	very little.
" 2	"	"	not above 1 oz.
" 1	"	"	1½ oz.
" 1	"	"	3 oz.
" 1	"	"	4 oz.
" 1	"	"	6 oz.
" 4	"	"	a considerable quantity.

In 4 of these 12 cases the state of the lining of the ventricles is likewise expressly described.

In 1, in which there was no fluid in the ventricles, and in 1 in which there was very little fluid, their lining was not altered.

In 1, in which there was no fluid, the choroid plexuses were beset with tubercular granulations.

In 1, in which there were 4 oz. of fluid, their lining was slightly opaque.

In 10 of these 12 cases the consistence of the cerebral substance was everywhere natural.

In 1 the brain was generally firmer than usual.

In 1 the anterior parts of both posterior cerebral lobes, and the whole of the cerebellum, were softened,—changes which were most evident on the left side.

In 16 cases the central parts of the brain were softened.

In 5 of these 16 cases the softening was but slight at the centre.

In 1 of these 5 cases the substance of the brain elsewhere was healthy: six ounces of fluid in the ventricles, their lining healthy.

In 1 of these 5 cases the substance of the brain elsewhere was healthy: four ounces of fluid in the ventricles, their lining granular.

In 1 of these 5 cases the substance of the brain elsewhere was healthy: much fluid in the ventricles, their vessels large, choroid plexuses turgid.

In 1 of these 5 cases the substance of the brain elsewhere was healthy: much fluid in the ventricles, their lining opaque, and vessels turgid.

In 1 there was much yellow softening of the anterior and lower half of the middle lobes, greater in degree and extent on the left side; not above half an ounce of fluid in the ventricles.

In 11 instances the cerebral softening was considerable.

In 3 of these 11 cases, the cerebral substance elsewhere was softened also.

In 1 of these three cases, both posterior lobes were softened, especially the right, and the brain there had an uniform yellowish white colour.

In 1 of these 3 cases, the brain was very vas-

lifetime of the patient led to the suspicion of the disease being something else than an ordinary attack of water in the brain.

The complications of hydrocephalus consist almost entirely in the deposit of tubercle in many organs of the body, and in the various results to which that tubercular deposit may have given rise. The lungs and the bronchial glands are the parts most frequently and most seriously invaded by the tubercular deposit; the spleen, liver, mesenteric glands, and intestines, rank next in frequency as the seat of tubercle. The complication of hydrocephalus with tuberculous ulceration of the intestines is one which, though not very frequent, must not be lost sight of, since its existence may give rise to diarrhoea, and thus lead to an error of diagnosis on your part, if you look for constipation of the bowels as an invariable symptom of water in the brain.

But let us now pass to the examination of the symptoms of acute hydrocephalus. We cannot, however, do more to-day than familiarize ourselves with the main features of the disease, and must leave all attempts at filling up the outline to our next meeting.

The first or premonitory stage of the

cular down to the centre of Vieussens; the lower and posterior third of the lobe was of a yellowish white colour, and quite fluid. Six ounces of fluid in the ventricles. Cerebellum soft.

In 1 of these cases, there was great congestion of the brain, and general softening increased towards the centre. Much turbid reddish fluid in the ventricles.

In 3 other cases, the lining of the ventricles was altered, viz:—

In 1 it had lost its polish, and was slightly thickened. Six ounces of fluid in the ventricles.

In 1 it was thickened and dull. Much fluid in the ventricles.

In 1 it was opaque and thickened. Much fluid in the ventricles.

In 5 instances the lining of the ventricles was altered, and the cerebral substance elsewhere softened; viz:—

In 1 the whole brain was softened; the thalami optici were of a gelatinous consistence for a quarter of an inch deep: there was much fluid in the ventricles, and their lining was opaque.

In 1 there was increased vascularity and general softening of the cerebrum and cerebellum; much fluid in the ventricles, and their lining very thick and firm.

In 1 softening began about half an inch below the surface of the brain, and increased towards the centre; much fluid in the ventricles, and their lining remarkably thick.

In 1 there was great softening of both posterior lobes, especially of the right; two ounces of fluid in the ventricles, and their lining but slightly opaque.

In 1 there was great vascularity, especially of the grey matter of the convolutions; extreme softening of the anterior and middle lobes, proceeding from the longitudinal fissure outwards; most marked on the right side, but the posterior lobe was not at all affected. There was capillary apoplexy of the left corpus striatum. The ventricles contained four ounces of turbid rose-coloured serum; their lining membrane was very vascular, thick, and firm in some parts,—thick, soft, and actually disintegrated in others.

affection is attended with many indications of cerebral congestion, coupled with general febrile disturbance, and presenting exacerbations and remissions at irregular periods. The child becomes gloomy, peevish, and slow in its movements, and is little pleased by its usual amusements. Or, at other times, its spirits are very variable; it will sometimes cease suddenly in the midst of its play, and run to hide its head in its mother's lap, putting its hand to its head, and complaining of headache, or saying merely that it is tired and sleepy, and wants to go to bed. Sometimes, too, it turns giddy, as you will know, not so much from its complaint of dizziness, as from its suddenly standing still, gazing around for a moment as if lost, and then, either beginning to cry at the strange sensation, or seeming to awake from a reverie, and at once returning to its play. The infant in its nurse's arms betrays the same sensation by a sudden look of alarm, a momentary cry, and a hasty clinging to its nurse. If the child can walk, it may be observed to drag one leg, halting in its gait, though but slightly, and seldom so much at one time as at another, so that both the parents and the medical attendant may be disposed to attribute it to an ungainly habit which the child has contracted. The appetite is usually bad, though sometimes very variable, and the child when apparently busy at play may all at once throw down its toys and beg for food; then refuse what is offered, or, taking a hasty bite, may seem to nauseate the half-tasted morsel, may open its mouth, stretch out its tongue, and heave as if about to vomit. The thirst is seldom considerable, and sometimes there is an actual aversion from drink as well as from food, apparently from its exciting or increasing the sickness. The stomach, however, seldom rejects every thing, but the same food as occasions sickness at one time is retained at another. Sometimes the child vomits only after taking food; at other times, even when the stomach is empty, it brings up some greenish phlegm without much effort and with no relief. These attacks of vomiting seldom occur oftener than two or three times a day, but they may return for several days together, the child's head probably growing heavier, and its headache more severe. The bowels during this time are disordered, generally constipated from the very first, though their condition in this respect sometimes varies at the commencement of the disease. The evacuations are usually scanty, sometimes pale, often of different colours, almost always deficient in bile, frequently mud-coloured, and very offensive. The abdomen is seldom full; the child sometimes complains of pain in it, and it is tender on pressure. The tongue is not dry, generally rather red

at the tip and edges, coated with white fur in the centre, which becomes yellowish towards the root. Occasionally I have seen it very moist, and uniformly coated with a thin white fur. The skin is harsh, but there is no great heat of surface; the nares are dry, the eyes lustreless, the pulse accelerated, but seldom exceeding 120 in children of 4 years old and upwards, not full or strong, but often unequal in the force and duration of its beats. The child is drowsy, and will sometimes want to be put to-bed two or three times in the day; but it is restless, sleeps ill, grinds its teeth in sleep, lies with its eyes partially open, awakes with the slightest noise, or even starts up in alarm without any apparent cause. At night, too, the existence of intolerance of light is often first noticed in consequence of the child's complaints about the presence of the candle in the room.

I need scarcely say that you must not expect to find all these symptoms in every case, neither, indeed, when present are they persistent, but the child's condition varies greatly in the course of a few minutes; cheerfulness alternating with depression, and sound sleep being now and then enjoyed in the midst of the unrefreshing dozes of the night. It will not be by a hurried visit of a few minutes that you will learn these things; you must not grudge your time, if you hope ever to attain to excellence in the management of children's diseases.

This precursory stage is of very variable duration, but on the average does not exceed four or five days. If the disease be not recognised, or if the treatment adopted be unsuccessful, it will pass into the second stage, in which the nature of the affection is very apparent, though unhappily the prospect of its cure is almost lost. The child no longer has intervals of cheerfulness, nor attempts to sit up, but wishes to be left quiet in bed, and the face assumes a permanent expression of anxiety and suffering. The eyes are often kept closed, and the eyelids are knit, the child endeavouring to shut out the light from its morbidly sensitive retina. The skin continues dry, the face is sometimes flushed, and the head often hot; and though these two symptoms vary much in their duration, coming and going without any evident cause, yet there is a permanently increased pulsation of the carotids, and if the skull be not ossified the brain may be felt and seen forcibly beating through the anterior fontanelle. The child is now very averse to being disturbed, and often lies in a drowsy condition, unless spoken to, when, if old enough to answer, it usually complains of its head, or of weariness or sleepiness. Its replies are generally rational, but very short; and if it need anything, it asks in as few words as possible, in a quick, peevish

manner, and shows much irritability if not at once attended to. At other times it lies with its face turned from the light, either quite quiet, or moaning in a low tone of voice, and now and then uttering a short, sharp, lamentable cry, which M. Coindet, of Geneva, regarded as characteristic of the disease, and hence termed it *cri hydrencephalique*, but making no other complaint than the low moan and the occasional plaintive cry. To this, however, there are exceptions, and children sometimes scream with the intensity of the pain, or cry out, "My head! my head!" most piteously. As night comes on, there is almost always a distinct exacerbation of the symptoms, and the quiet of the day is frequently succeeded by a noisy and excited state, in which vociferous cries about the head alternate with delirium. This, however, is not by any means a constant occurrence; an increase of restlessness being often the only difference from the state of stupor in which the child lay during the day. At the commencement of this stage the pulse is quickened, sometimes very much so, and is in many cases unequal in the force and quickness of the beats. Irregularity of its rhythm, or distinct intermission in its beat, is the next change, and is usually perceived at the same time with a great diminution in its frequency, which often falls in a few hours from 120 to 90 or 80. At the same time that these changes take place in the general characters of the pulse, its power becomes manifestly diminished, while the slightest exertion, such as attends any alteration in the child's position in the bed, will often suffice to increase its frequency twenty beats or more in the minute. The child sometimes keeps its eyes so firmly closed that we can scarcely see the state of its pupils. Usually they are not much affected, but sometimes one is more dilated, and acts more sluggishly than the other, or, in other cases, strabismus exists, though perhaps in a very slight degree, or confined to one eye. It is seldom that vomiting continues beyond the commencement of this stage, but its cessation is not followed by any desire either for food or drink. The bowels usually become even more constipated than they were before, and the evacuations continue quite as unnatural, while all flatus disappears from the intestines, and the abdomen thus acquires that shrunken form on which much stress has been laid by some writers as characteristic of hydrocephalus.

The transition from this to the third stage of the disease is sometimes effected very gradually by the deepening of the state of drowsiness, till it amounts to a stupor from which it is impossible to rouse the child. At other times, however, this stupor comes on very suddenly, succeeding imme-

diately to an attack of convulsions. These convulsions usually affect one side much more than the other, and after the fit has passed off one side is generally found partially or completely paralysed, while the child makes constant automatic movements with the other, carrying the hand to the head, and alternately flexing and extending the leg. The side which is the most affected during the fit is generally, though not invariably, the most palsied afterwards. When the third stage is fully established, the child lies upon its back in a state of complete insensibility, with one leg stretched out, the other drawn up towards the abdomen. The tremulous hands are either employed in picking the lips or nose till the blood comes, or one hand is kept on the genitals while the other is rubbing the face or head. The head is at one moment hot, and the face flushed, and then the heat disappears and the flush fades, though usually there is a permanent increase in temperature about the occiput. Sometimes the skin is dry, and then, though the extremities are cold, a profuse sweat breaks out on some part of the body or on the head. The pulse often loses its irregularity, but at the same time it grows smaller and more rapid, till at length it can be counted only at the heart. The eyelids now close only very partially, and in most cases there is some degree of strabismus. Light is no longer unpleasant, for the dilated pupils are either altogether motionless, or they act very sluggishly, frequently oscillate under the stimulus of a bright light, alternately contracting and dilating, till at length they subside into their former dilated condition. The child now often makes automatic movements with its mouth, as though chewing; or as though endeavouring to swallow something. It generally happens that, although sensibility is quite extinguished, the child will still swallow anything that is put into its mouth, and the power of deglutition is in most cases one of the very last to be abolished.

An attack of convulsions now sometimes puts an end to the painful scene; but often the child lives on for days, though wasted to a skeleton, and its features so changed by suffering that those persons who had seen it but a short time before would now scarcely recognise it. The head often becomes somewhat retracted, and the child bores with the occiput in the pillow; the eyelids are wide open, and the eyes turned upwards so as to conceal three-fourths of the iris beneath the upper lid, while the countenance is still further disfigured by a horrible squint, or by a constant rolling of the eyes. The pupils are now fixed and glassy, the white of the eyes is extremely bloodshot, and their surface is besmeared with a copious secretion from the Meibomian glands which

collects in their corners. One leg and arm are stiff and motionless, the other in constant spasmodic movement, while the hands are often clenched, and the wrists bent upon the forearms. At the same time there is frequently so much subultus as to render it impossible to count the pulse, and the muscles of the face are thrown from time to time into a state of spasmodic twitching. Cold clammy sweats break out abundantly about the head, the breathing is laboured, deglutition becomes difficult, and the child almost chokes with the effort to swallow, or lets the fluid run out at the corners of its mouth. It is uncertain how long this condition may endure, the recurrence of convulsions usually hastens the end, but sometimes many days will pass, during which death is hourly expected and earnestly prayed for to put an end to the patient's sufferings.

CLINICAL LECTURE ON
ORGANIC DISEASES OF THE
EYEBALL.

Delivered at St. Bartholomew's Hospital,

By WILLIAM LAWRENCE, Esq., F.R.S.

President of the Royal College of Surgeons.

[Reported by Mr. HOLMES COOTE.]

No other organ of the body is subject to diseases so numerous and various as those we meet with in the eye: this circumstance arising from the great number of totally different tissues entering into its composition, from the high and delicate organisation which characterises them, and from the numerous causes of disease to which it is exposed, both by its position, and the nature of its important office. In addition to the most diversified forms of inflammation, and of its various effects, it suffers not unfrequently from those serious affections, which not only destroy its functions, but disorganise its component tissues, converting them more or less completely into a morbid mass exhibiting little or no traces of the natural structure. These are mostly malignant affections. I have the opportunity of bringing before you some cases of recent occurrence, calculated to illustrate the nature, progress, and treatment of these affections; and I shall shew you the diseased parts.

CASE I.—*Fungus Hæmatodes of the Eye-ball—Extirpation of the Eye—Recurrence of Disease in the Orbit.*

Treyton Collinson, æt. 4, a perfectly healthy child, with fat cheeks and ruddy complexion, was admitted into the hospital, December 1846, under Mr. Skey.

The parents, labouring people, who had

bestowed little or no attention upon the matter, stated that, three months ago, the boy became blind of the right eye without apparent cause, and that subsequently a yellow appearance was noticed behind the pupil. As there was no pain nor inconvenience, medical advice was not sought for till a week ago, when a surgeon, obviously recognising the serious nature of the disease, recommended that the boy should be taken to London.

The globe is enlarged and distends the lids, which are somewhat swelled and reddened, but capable of closing. The increased size is principally observed in the region of the ciliary body, where the sclerotics, distended, thinned, and of bluish white colour, forms an unnatural prominence round the whole circumference of the cornea. The conjunctiva is not affected. A few tortuous vessels are seen on the surface of the globe. Through the transparent cornea is seen the crystalline lens, striated and of golden hue, pushed forwards together with the discoloured iris, of which the pupillary aperture is widely dilated, against the posterior surface of the cornea. There is no affection of the absorbent glands. The child suffers no pain, and is in perfect health.

A grooved needle, introduced behind the iris into the globe, allowed the escape of about a drachm of a watery dark-coloured fluid, composed of altered blood discs floating in serum. No apparent diminution in the size of the globe ensued.

March 8, 1847.—The enlargement and prominence of the globe are increased, without any further evidence of unusual vascular activity. The patient is still free from pain; the general health remains uninjured.

The globe was extirpated this day by Mr. Skey, the boy having been rendered unconscious by the inhalation of the vapour of sulphuric ether, so that there was no manifestation of pain, and he was removed to bed without being aware of what had taken place.

Examination of the morbid parts.—A semi-transparent structure, not thicker than cream, of light grey colour, filled the cavity of the globe. A portion of it had escaped through a cut in the back of the sclerotics in the course of the operation, and, as this incision also severed the insertion of the optic nerve, the relation of the morbid growth to that nerve could not be ascertained. The choroid membrane was in most part healthy: the pigment layer, composed of cells unaltered in form, retained its normal dark colour: there was no trace of retina. There was no material change in the iris, nor in the crystalline lens, excepting the loss of its transparency. The vitreous humour had disappeared. Immersion in alcohol rendered the diseased structure opaque and firm, so that

the eye, which is preserved in the museum of St. Bartholomew's, presents in this respect the usual characters of fungus hæmatodes. The substance which escaped from the sclerotica appeared, when magnified 800 diameters, to be composed of an assemblage of small cytoblasts (Fig. 1). The micro-

FIG. 1.



scopical characters were in some measure lost after the part had been kept in alcohol.

The boy hardly suffered from the operation, and recovered without an unfavourable symptom.

April 7th.—An inflammatory swelling, which began in the absorbent glands in front of the ear a week ago, and was considered to be a development of the disease in the absorbent glands, having attained the size of a hen's egg, broke and discharged thick healthy pus. The opening closed, and the swelling had disappeared.

April 17.—A slight fullness of the lower lid is observed, and found to proceed from an elastic tumor, the size of a pea, and apparently springing from the margin of the orbit. The general health is unimpaired.

May 9.—The tumor is increasing in size. The boy left the hospital to return with his parents to the country.

CASE II.—Firm fungous and melanotic growth, springing from a shrunken eyeball, and protruding from the orbit
—Operation—Examination of the morbid parts.

Thomas Gazeley, æt. 44, blacksmith, a robust, healthy man, of temperate habits, from the country: states that twelve years ago, in consequence of exposure to cold, the right eye became inflamed and bloodshot; the sight was weak, and he felt as if particles of grit had got under the lids. The complaint lasted several weeks; ultimately the globe shrank, and vision was permanently lost. Five years ago swelling occurred in the right orbit, and subsided without particular treatment. About eight months ago a tumor arose from the collapsed globe: it increased rapidly, soon filled the orbit, and in the course of a few months, protruded the palpebræ. In the month of December he consulted some person in the country, who adopted the novel proceeding of stitching the lids together with strong sutures, for the purpose of restraining the morbid growth.

April 8, 1847.—He was admitted into the hospital. The palpebræ, still united by a

strong suture, are distended and greatly increased in depth by a large tumor, which, having filled the orbit, had protruded partially between the lids, increasing chiefly downwards and outwards, and extending the lower palpebra to about six times its natural depth. Upon dividing the suture, and separating the lids, there was exposed a bleeding fungous mass, of irregular surface, and greyish colour, equal in size to a small orange. The shrunken globe, imbedded in the tumor, was pushed to the upper and inner angle of the orbit, where a portion of the sclerotica and cornea was still distinguishable. The patient said that his appetite was good; that he slept well, and did not suffer much pain; but upon accurate inquiry it was found that he had suffered greatly at times, and had often lost his rest during the few last weeks. There was no disease of the absorbent glands, nor any other evidence of disturbed health.

April 10.—Although the aspect of the disease was unfavourable, its rapid growth, its fungous, grey, and bleeding surface, leading to the belief that it was of malignant nature, the urgent desire of the patient to be relieved from so unpleasant a local malady, which had already caused, and still produced much suffering, induced my colleagues and myself to agree in thinking, that the operation might be performed even as a measure of temporary relief. I accordingly cleared out the contents of the orbit completely, the patient having been previously rendered insensible by the ether vapour. It was necessary to remove about two-thirds of the lower lid in consequence of its great extension. There was free bleeding, as might be expected, from the ophthalmic artery having been divided at the very back of the orbit. It ceased spontaneously after the operation.

Examination of the diseased mass.—The tumor was of firm consistence, irregularly lobulated, and of mottled grey colour, the tint in some parts approaching to black. On making a section it was found that the shrunken globe was filled with a firm black substance, which had pushed through the coats posteriorly, to the size of a filbert. This was gradually shaded off into the firm mass, principally of whitish and greyish substance, with slight admixture of darker matter, which constituted the bulk of the tumor.

Microscopical Examination.—Numerous cells, mostly of oval or elongated form, containing nuclei with nucleoli, and a few granules, were imbedded in a dense fibrous structure. The dark black or mottled portion of the tumor differed from those of lighter colour in the superaddition of numerous pigment granules, either free or contained in round thin-walled cells of various sizes. (Figs. 2 and 3, next page).

FIG. 2.

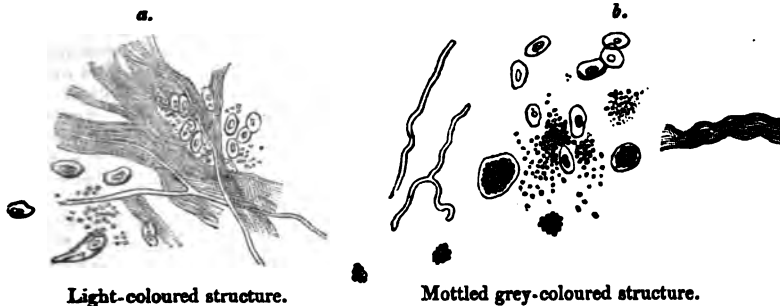


FIG. 3.



Deep black-coloured structure.

June 1.—The patient felt relieved in the course of the evening, and passed an excellent night. He has been since entirely free from pain, with good appetite and spirits, and is now much improved in health and flesh. Granulations sprung up from the surface of the orbit, which is now filled up, the anterior orifice being just closed by the upper lid, and the integuments below being considerably drawn in over the inferior margins of the cavity.

CASE III.—*Change of structure in the choroid membrane, accompanied by absorption of the retina, hypertrophy of the sclerotic coat, and general enlargement of the eyeball—Operation—Description of the diseased structures.*

Thomas Page, *et.* 24, Private in the 2nd Battalion Coldstream Guards, a tall, well-made man, found upon waking in the morning of August 9, 1846, that the left eye was weak and watering, with a sensation as if particles of grit were under the lids. The conjunctiva soon became tumid, and in a

short time vision was lost. In the early part of December, he was brought to the hospital by Mr. Greatrex, Surgeon to the Battalion, who, having failed in arresting the progress of the disease by the prompt and judicious administration of such remedies as were from time to time indicated, was desirous of obtaining the opinions of Mr. Stanley and myself respecting the nature and treatment of the affection. The globe was at that time unnaturally prominent, distending and protruding the lids. The conjunctiva was uniformly red and thickened, and there was under it an undefined dark prominence behind the edge of the cornea on the nasal side of the globe. The crystalline lens, which was opaque, was pushed forward in contact with the cornea. The complaint had been very painful in its progress, and was still attended with great suffering, affecting the appetite, interfering with rest, and rendering the patient pale and thin.

The crystalline lens and iris were here obviously pushed forwards, by increased volume of the parts behind them. Although the history of the case, and the inflamed state of the eye on its anterior surface, favoured the opinion, that the disease was merely inflammatory, that the disorder might subside, and end in atrophy of the organ, the general enlargement and protrusion of the eye, together with the dark appearance on its temporal side, led us to the conclusion, that there was organic change in the contents of the globe, so that it ought to be extirpated. The objection to this course was that the patient had been considered to be of hæmorrhagic constitution. Mr. Greatrex had experienced great difficulty in stopping bleeding on two occasions, first on the extraction of a tooth, and secondly from the introduction of a seton. In the latter instance hæmorrhage continued four days and nights without intermission, being arrested at last by plugging the track of the seton with lint, and the application of ice. We therefore deemed it advisable to postpone the performance of an operation, in which, while the bleeding is always considerable,

the means of arresting it are more limited than in other situations.

The disease having steadily advanced, with intense and constant pain, the patient determined to have the eye removed, at whatever risk, and was admitted into the hospital on March 28th, 1847. The globe, much increased in size, protrudes from the orbit as a red fleshy mass, over which the eyelids cannot be closed. The boundary of the sclerótica and cornea is hardly distinguishable. Upon the most prominent part, corresponding to the cornea, is a circular spot of ulceration, as large as a sixpence, with irregular surface and edge: it obviously penetrates the cornea. I extirpated the globe in the usual manner, after the ether vapour had been inhaled.

Examination of the eye.—The globe was filled with a diseased growth, moderately firm, partly yellowish, partly reddish, of considerable vascularity, without any trace of the normal structures: it was very much like what is frequently observed in a scrofulous testicle. If it had been seen detached, no one would have supposed that it had formed part of an eye. Upon careful examination, it was found that this diseased mass was choroid and iris, both of them

much thickened, entirely altered in structure, and in great part deprived of their normal coating of pigment cells. In the middle of the eye there was a small cavity, with smooth and darkish surface, containing a little dark fluid. This cavity was occupied by a mass consisting of the reflected iris: it had pushed forwards against the posterior surface of the cornea, and had been from thence reflected towards the centre of the globe. The sclerótica was much thickened, in some parts to the extent of a quarter of an inch, its texture being softer than usual. The cornea was extended and thin. At the extremity of the optic nerve there was a small shred of retina. The ulcerated spot upon the anterior surface of the globe penetrated the cornea, and opened into the anterior chamber. There was no trace of crystalline lens or ciliary processes.

Microscopical examination.—The sclerotic coat, 4—5 lines in thickness, was composed, as usual, of white fibrous tissue. The choroid coat was thickened by the deposit of numerous small granular corpuscles (cytoblasts), and a few nucleated cells, in a dense fibrous stroma (Fig. 4). The pigment cells of the choroid were in a great measure deprived of their colouring matter.

FIG. 4.



In order to obviate the danger of bleeding, from the constitutional disposition to hæmorrhage supposed to exist in this patient, a portion of lint, firmly folded, was introduced between the palpebræ: this was covered by other larger pieces, making a graduated compress, which was securely fixed, so as to stop all bleeding, by a circular bandage round the head. The severe pain of the eye ceased after the operation, and the patient passed a comfortable night. The compress and bandage caused swelling, with great uneasiness and redness of the lids and adjacent parts during the following days. The removal of the bandage on the third day, and the subsequent soaking and gradual detachment of the portions of lint, which was effected very cautiously, restored perfect ease. No bleeding ensued from the wounded surface; and thus the patient lost much

less blood than is usual in this operation. Recovery proceeded without an unfavourable symptom, and there was a marked improvement in flesh and strength while he remained in the hospital. He went out at the end of April, and soon resumed his duty as a soldier.

CASE IV.—*Carcinomatous disease of the eye-ball.*

I now exhibit to you, from the museum of the hospital, an eye, which was removed, on account of carcinomatous disease, from a middle-aged man, by Mr. Wormald. "The tissues of the anterior and inferior third of the right eye are occupied by an irregular growth of firm and very vascular substance, with a granulated, warty, and very vascular surface. The optic nerve, of which a portion is preserved, is sound. There was no re-

tura of disease in the orbit, but the patient died with medullary tumors in the heart, and in some other parts, two years after the extirpation of the eye.*" The condition of the heart, which is now before you, is thus described in the Catalogue:—"Part of a heart, in which there is a large mass of firm medullary matter in the substance of the apex of the right ventricle, and of the septum. The morbid mass has not altered the external form of the heart, but it projects with a coarsely granular surface into the cavity of the ventricle, and has raised up the tricuspid valve: in its middle, its substance is softened and broken down. The pericardium is in every part closely adherent. The aorta is dilated, and both it and its valves have earthy deposits in them.†" Here is a specimen of dura mater from the same patient. All that portion of the membrane which covered the upper surface of the left cerebral hemisphere was thickened. "In some situations it is nearly half an inch thick, and its substance is throughout hard and tough, and appears irregularly laminated.‡" The skull, which, fifteen years before death, had been injured by a violent blow, was "increased in thickness and density at its upper part: its inner surface, especially on the right side, is marked by an unusual number of grooves and small apertures for blood-vessels. The sutures are not obliterated. The right malar bone is somewhat depressed towards the orbit, and the external and inferior angle of the right orbit is not so deep as that of the left. The right angle of the jaw is superficially ulcerated by the growth of a large cancerous tumor of the adjacent lymphatic glands.§" The optic nerve was found, after death, to terminate "by a blunt, but not bulbous, extremity, which is firmly adherent to the surrounding tissues. The eyelids, muscles, and all the other parts, are atrophied and contracted.||"

The specimens which I have now exhibited to you illustrate the pathology and treatment of the principal morbid growths affecting the globe of the eye. Case I. is an instance of fungus hæmatodes; Case II. of melanosis, combined with another morbid structure. In Case III. the choroid and iris are converted into a morbid structure of peculiar character not hitherto described; while in Case IV. there was true cancer of the eye-ball.

Of these affections, the most frequent is fungus hæmatodes, generally occurring in early childhood, not uncommonly in the

first twelve months. A morbid structure is deposited in the interior of the eye, within the choroid, and, compressing the retina, causes complete loss of sight. As the latter circumstance is not noticed at an early age, and there is no pain, the disease is first discovered by the appearance of a more or less bright yellow colour, like that of a metallic surface, deep in the globe. The soft cerebro-briform deposit, which is white, sometimes with very light greyish or reddish tint, produces the yellow appearance, in consequence of being seen through the transparent media of the eye. In a very early stage, the peculiar appearance is only visible when the light falls on the eye in an oblique direction. We soon see the diseased growth as an uneven yellowish mass in the fundus of the globe, on which red vessels are often observed.

During this development of the complaint there is no pain, nor increased redness: indeed, no other visible change except the appearance behind the pupil. The increase of the morbid growth distends the globe, causing redness of the sclerótica, a watering and painful state of the eye. The lens now becomes opaque, of dirty greyish tint, or of golden hue with whitish streaks in stellated arrangement. It is pushed forwards, together with the iris, which is dull, discoloured, and motionless, against the posterior surface of the cornea. Pain in the head and febrile disturbance usually attend this more active progress of the local malady. As the globe enlarges, it either distends the lids or partially protrudes between them; the vascular congestion of its external coverings increases; the cornea becomes dull or cloudy; the tunics give way at some point, allowing the escape of a thin bloody fluid, and, perhaps, of the crystalline lens, with temporary relief to the patient. There soon protrudes from the aperture a dirty greyish, ragged, fungous mass, which, liberated from the confinement of the globe, discharging a thin, offensive fluid, sometimes bleeding, and sometimes lessened by partial sloughing, rapidly increases in size. The absorbent glands in front of the ear or in the neighbourhood of the jaw are sometimes enlarged. This destructive progress of the local remedy is attended with increase of pain, loss of rest, failure of appetite, and the patient sinks emaciated and worn out with suffering. Secondary deposits are found after death, as in other instances of fungus hæmatodes.

Case I. presents an exception in important points to the general history which I have just given you. In a stout ruddy boy we found enlargement of the globe, with other changes in the eye, unattended with pain, inflammation, or any diminution of the patient's appetite, rest, or general health.

The exact nature of the affection was un-

* Catalogue of the Museum, Series ix. No. 17.

† Op. cit., Series xii. No. 60.

‡ Op. cit., Ser. vii. No. 63.

§ Sub-ser. A, No. 48.

|| Ser. ix. No. 28.

certain: it might have been enlargement of the globe from accumulation of fluid, the general and equable thinning and bulging of the sclerotica all around the cornea favouring this view. With this notion, the history of the case, and the patient's age, were quite inconsistent. There could be little doubt that the serious changes in the anterior segment of the globe depended upon organic affection of the parts behind. That such disease would prove to be malignant, was most probable; but the history of this case differed in points of consequence from that of fungus hæmatodes; and instances have been known, although extremely rare, of organic diseases in the eye not malignant. It was therefore thought right to give the boy the chance of an operation, more particularly as, with the previous employment of ether vapour, it could be performed without pain. Had the nature of the case been clearly ascertained, an operation would not have been undertaken, as disease has invariably returned in the part, even where the eye has been extirpated at the very earliest period.

I would not, however, represent to you that the state of a patient with fungus hæmatodes of the eye is absolutely hopeless. By the long-continued use of mercury, the progress of the disease has been arrested in a few instances, and the morbid deposition has been removed. I had under my care a case of this kind, in which I saw the morbid deposit in its early state, in which the globe afterwards enlarged, and the lens became opaque. The employment of mercury, persevered in for many weeks, completely arrested the malady, and the patient, after remaining well for years, died of affection of the head, excited by development of disease in the brain.

Melanosis is not met with at so early a period of life as fungus hæmatodes. I have not seen it in subjects under 22 years of age. Commencing primarily in some texture which is the natural seat of pigment corpuscles, *e. g.* the skin or the eye, it consists in the deposition of a structure varying in colour from a mottled grey to the deepest jet black. The morbid deposit, collecting in the eye between the choroid membrane and the retina, compresses and displaces the latter, fills the back of the globe, and pushes forwards the crystalline lens and the iris. Vision is lost at an early period. Sooner or later the eye becomes red and painful, and one or more dark prominences are seen on its anterior segment, just behind the cornea, covered by numerous straight vessels and the thinned sclerotica, through which the bluish black colour of the tumor appears. The morbid growth escapes through an opening of the sclerotica, and forms a tumor in the orbit, which, covered by the conjunctiva,

and springing from the globe, appears like an enlarged eye. As this increases and protrudes, ulceration ensues, and a black, bleeding, fungous mass issues from the opening, in which, ultimately, no trace of the normal structures is observable. The patient sinks under the severe local pain and constitutional suffering attendant on the destructive process, and secondary deposits, similar in structure to the original growth, are found in various parts of the body.

In Case II. the melanotic growth had issued from a shrunken globe, and formed only a small portion of the tumor, which filled the orbit, and then spread out into the large external protuberance, covered by the distended palpebræ, which had been united by the strange surgical process mentioned in the relation of the case. The mass of this tumor was of firm consistence, with darkish discolourations at some points, and probably allied in nature to fungus hæmatodes. A similar combination of the two structures existed in a disorganised eye preserved in the hospital museum. I removed it many years ago from a patient above fifty, who died on the tenth day, without any obvious cause. His liver was enormously enlarged, and filled with melanotic deposits of various magnitude.

In such an instance as Case II. the influence of the operation on the duration of life is uncertain; experience does not warrant the expectation of permanent cure.

The extirpation was undertaken at the urgent desire of the patient, and as the only means of relieving him from a loathsome and painful malady. The use of the ether vapour obviated the strong objection, which would otherwise have been felt to the operation, from its extremely painful nature. Although it may be doubted whether the operation has been permanently successful in any one instance of melanosis, cases are not wanting in which, by the early and complete extirpation of the morbid growth, life has been prolonged for some years. The preparation I now shew you is that of an eye affected with melanosis, removed by myself, many years ago, from an Irishman, under thirty; he recovered speedily from the operation, and called upon me between one and two years afterwards, in perfect health, and on the point of starting for his native country, where he was lost sight of. Another specimen on the table is the melanotic eye of a young female, removed in this hospital. She survived the operation nearly four years.* In December, 1845, I removed the eye of a gentleman, of spare habit, and rather weak constitution, who, although he suffered most severely in the operation, went on favourably after, and recovered rather

* Her case is related in this journal, New Series, vol. i. p. 96.

quickly. The melanotic tumor had made its way externally through the coats of the eye; the optic nerve was discoloured at its point of division near the optic foramen, and Mr. Coote found, upon minute examination, that there were some of the peculiar corpuscles in the blood-vessels, and amongst the muscular fibrils. This patient has been in good health, and pursues his occupation, that of a business requiring active exertion, to the present time. Yet three or four small tumors, each about the size of a bean, have formed within the margin of the orbit; I some months ago removed one of regular melanotic character, the incision healing readily, and the cicatrix remaining sound.

The most favourable time for extirpating the eye is before the melanotic growth has made its way through the sclerotica. Although, however, the disease may have lasted a considerable time, such as two years or more, and may have so increased as to form a large tumor in the orbit, it may still not have extended to any surrounding textures, nor have shewn itself in any other part of the body; remaining therefore, so far, strictly local. In January last, I removed the eye of a gentleman, in which disease had begun two years and a half previously. Some particulars of the case are mentioned in the present volume, at p. 138. The case went on so favourably, that the patient sat up for several hours on the eighth day, enjoying his meals, and feeling quite well. On the following day he staid up but a short time, feeling tired, and disinclined to eat. The weakness and loss of appetite progressively increased, although the *Liquor Cinchonæ Cordifoliz* of Mr. Battley was freely administered with some temporary effect. Slight redness came on in the face and forehead, but passed off again. A comatose condition supervened, from which the patient could be easily roused; he was a little delirious for two or three nights, but the mind remained quite clear; he sunk on the 16th day. The optic nerve was sound where it had been cut through, and the remnants of the divided muscles were perfectly free from disease. No trace of secondary affection was seen in the head, chest, or abdomen, which were carefully examined. Slight evidences of increased vascular activity were observed within the cranium, the vessels of the pia mater being somewhat fuller than usual, and the fluid in the arachnoid cavity a little increased. The internal surface of the dura mater was covered, for a space of about two inches square, by a thin film, not thicker than the finest tissue paper, of light reddish tint, which peeled off with the greatest ease: it was apparently fibrine; and there was a slightly ecchymosed spot in the pia mater, about the size of a sixpence.

The appearance in question had probably been caused by the effusion of two or three drops of blood. The liver was of lighter colour, and rather firmer than usual.

I have been induced to mention this case to you, partly by its fatal termination considered in connexion with the circumstance of the ether vapour having been administered before the operation. The effect of the ether was produced in three minutes, and it had gone off in two or three minutes after the operation was ended. No case could have proceeded more favourably than this did for eight days, nor did it present, either during that period or subsequently, any peculiar symptom referable to this agent, of which the noxious influence, if it had possessed any such, must have shewn itself in the other cases of similar operations now related to you. It must be recollected that the previous habits of this patient had not been temperate, and that he had suffered much mental depression previous to the operation.

In Case III. the choroid and iris were converted into a firm light yellowish brown mass, of considerable thickness, resembling in colour and consistence the tuberculous degeneration to which the testicle is subject. On the nature of this disease, which I have never seen before, and of which no recorded instance has come within my knowledge, I have no observations to make, except that I believe it not to be malignant: this point will be elucidated by the future progress of the case.

Cancer of the eye (Case IV.) is a rare affection: very few instances have come within my observation. The preparations now before you shew that the disease is less disposed to extend to the surrounding parts than when it occurs in many other situations; the female breast, for example. The anterior segment of the globe is converted into a dense scirrhus mass of considerable thickness, while the posterior segment and the optic nerve are unaffected. The palpebræ, with their mucous membrane, the portions of muscles of the globe and optic nerve left in the orbit, were removed after death, and are seen in this preparation free from disease. Thus there was no return of disease in the part, but the patient died of secondary cancerous affections, having survived the operation two years. It is worthy of remark that although the primary affection was genuine scirrhus, the deposit in the heart had more of the medullary character.

In diseases of the globe requiring extirpation, the organ is almost always increased in size, filling up the socket, protruding and distending the lids. The first object is to expose completely the anterior aperture of the orbit. For this purpose, the external commissure of the palpebræ must be divided

by an incision about an inch in length, extending horizontally to the temple, so as to allow each lid to be everted and dissected back. As it is advisable to clear the orbit, the knife must be carried close to the bone all round, beginning at the lower part, proceeding to the sides, and finishing above. The operator will be careful not to penetrate the bone, especially at the roof of the cavity. The muscles and the optic nerve will be divided as far back as possible, with a double-edged knife curved on the flat, or strong scissors, of similar shape, introduced along the external wall of the cavity, of which the slanting surface renders the use of the instrument more easy. Considerable bleeding may be expected from the ophthalmic artery. It usually ceases spontaneously: should it continue to a dangerous or alarming extent, pressure must be resorted to, as it is hardly practicable to apply a ligature. The object may be accomplished by means of lint rolled into a conical shape, and held or bound on the part; this should be removed as soon as the purpose is answered, perhaps in three or four hours. No foreign substance should be left in the orbit, which is closed by the approximation of the lids.

[The microscopical examinations mentioned in the foregoing lecture were made by Mr. Coote, who made the drawings by the aid of the camera lucida.]

Original Communications.

CASE OF PUERPERAL CONVULSIONS FOLLOWING DELIVERY,

WHERE THE VAPOUR OF SULPHURIC ETHER
HAD BEEN INHALED DURING LABOUR.

By ALEXANDER WOOD, M.D. F.R.C.P.E.
Lecturer on the Practice of Medicine.

I SHOULD very much regret were my object in submitting to the profession the details of the following case to be so far misunderstood as to lead to the supposition that I proposed, on the evidence of one single case, where injurious consequences followed the use of ether, (whether occasioned by it or not is doubtful) to lead a crusade against the inhalation of that drug in obstetric medicine. On the contrary, believing as I am compelled to do, on the recorded testimony of many observers, as well as from my own experience, that the inhalation of ether can be practised in most cases with impunity and in many with advantageous results,

I cannot but regard it as a duty to lay before the profession the details of any case which may appear to throw doubt on the safety of the practice, in order that, by extending the basis of our induction, we may be the better able to determine whether any or what limits should be set to its employment.

The subject of this narrative, a stout, healthy, young woman, was delivered of her first child on the 15th Sept. 1845, after a tedious and painful labour: she suffered subsequently from a rather unusual sequel of a first confinement—severe after-pains, and I was then informed that previous to her marriage she had been the subject of painful dysmenorrhœa.

During lactation she menstruated occasionally, which somewhat reduced her strength, but she could not be induced to wean her infant until there was reason to suppose that she was again between two and three months gone with child.

Great disturbance of the stomach was the concomitant of the earlier period of her second pregnancy, and this contributed still further to weaken her, while from the agony she had endured during her first labour, she looked forward with dread to what she persisted in anticipating as the certain repetition of the same sufferings.

During the two latter months of her pregnancy, however, she improved both in health and spirits, and for at least a month before her confinement she had no complaint whatever, with the exception of those uneasy sensations with which persons in her situation are usually more or less annoyed.

She reported that she had passage from the bowels daily without the use of medicine, although in the progress of the labour I had reason to suspect that the alvine evacuations had not been sufficiently free.

Her labour commenced about 8 A.M., on the 29th of March. I visited her about half-past 10. I then found everything in a most favourable state—the os uteri well open, the head engaged in the brim of the pelvis, and the passages well lubricated and of natural heat. The membranes were reported to have been ruptured about half an hour before I arrived. The labour pains were strong and urgent.

The patient earnestly entreated to be allowed the use of ether to alleviate

her sufferings; but as there seemed a prospect of these being soon terminated in the natural way, I at first declined: subsequently, however, at the joint request of her husband and herself, I consented to employ it.

The apparatus used was one of the original ones, which I have since discarded as imperfect, and the ether was procured at a neighbouring laboratory, being of the ordinary commercial strength, but not, as I have since satisfied myself, strong enough for inhalation. Before the necessary preparations were made, the head had nearly passed through the brim.

The inhalation was commenced at about a quarter past 11, and the child was born about 12. The pains during that period occurred every eight or ten minutes, but the ether was not employed previously to each contraction. The patient never became fully under its influence, and though it seemed considerably to mitigate her suffering, yet it by no means afforded her that complete relief which I have seen in other cases both before and after this one.

After the head was born, an unusual time elapsed without a uterine contraction, and as the cord was twice twisted round the neck of the child, the interval was occupied in disengaging it; when this was done, on looking towards my patient, I was annoyed to see her firmly grasping the mouth-piece of the apparatus, and drawing in the vapour with deep inspirations. Her colour, naturally high, had become of a deep purple, and had collected in two spots in the centre of each cheek. Some force was necessary, on the part of the attendant, to remove the apparatus, which was followed by several deep sighs, and by convulsive twitches of the fingers. The after-birth came away in about twenty minutes, and I left the house about 1 o'clock.

My next visit was between 3 and 4 o'clock. She was then lying on her left side, with her face to the back of the bed, and the room darkened, so that I did not observe her countenance. Her pulse was about 60, and rather full and tense; the after-pains were exceedingly severe,—I have seen very many cases of labour lasting for hours where the patient did not seem to suffer so acutely from the uterine con-

tractions. She had passed urine freely. I ordered 15 drops of Sol. Mur. Morphicæ to be given every hour until the pain should abate. I visited her again between 9 and 10 o'clock. There had been no relief from the urgent pains, and as she lay on her back I observed the mouth twisted, and the features slightly distorted, during each contraction. I was inclined, however, to regard these as the expressions of suffering, rather than as the tokens of any more serious disease.

Between 10 and 11 o'clock I received a hasty summons to return to my patient. On arriving I found that she had taken two severe fits, and soon after I came she was seized with a third: these continued to return at intervals of ten minutes. They invariably commenced with painful contractions of the uterus, soon after which the eyes began to roll in a hideous manner, the face became frightfully distorted, the head was jerked forcibly backwards at short intervals, the teeth were firmly clenched, and the saliva forced through them with a hissing sound. The patient now appeared choking, when sudden relief was afforded by deep inspirations and expirations; at the same time the arms and fingers were affected: after this the abdominal muscles and the lower extremities. The countenance at this time assumed a deep purple colour, and seemed swollen. The veins both of the head and neck were distended. After lying quiet and apparently stupified for a minute or two, she eagerly asked for a drink. She appeared quite unconscious of what had occurred, declaring that there was nothing the matter with her but after-pains; that she had no headache, and never had known what headache was, and then relapsed into another fit. I drew off a small quantity of urine, and found that it was not coagulable by heat. The pulse was 54, oppressed and labouring; the carotids and temporals throbbing, and the superficial veins of the head distended.

There was not to my mind any doubt, after careful observation of the phenomena of the fit, and taking into account the whole history of the case, that it was one of puerperal convulsions of the epileptic character, attended with determination of blood to the head. The only doubt I had

was whether or no it had been caused by the previous inhalation of ether, and if it had, what influence this should have on the treatment. There was little time for deliberation, none for consultation. The fits were recurring with extraordinary rapidity, each one appearing more severe than its predecessor; the patient was roused with greater and greater difficulty between each attack. I therefore decided on adopting that mode of treatment which I had found most successful in similar cases where no ether had been exhibited. In fact, I resolved not to take into account the effect of the ether, real or supposed, but to treat the case precisely as I would have done an analogous one of undoubted idiopathic origin.

A vein was immediately opened in each arm, and 3xl. of blood abstracted in a full stream. The patient's head and shoulders were supported in an upright position by two attendants as far as her struggles rendered possible. Gr. v. of calomel, and gtt. ii. croton oil, were laid on the tongue: cold cloths were applied to the head. The abstraction of blood was well borne by the patient; the unnatural lividity disappeared from the face, and the fits never assumed the same violence, although for some time they continued nearly as frequent as before. The blood exhaled a strong ethereal odour; the coagulum was firm.

At 2 A.M. on the 30th, as the bowels had not responded to the croton oil and calomel an enema, with turpentine and ammoniated tincture of assafoetida was administered; this was retained. The fits had now become very slight, seldom producing more effect than slight convulsive twitching of the mouth, with rolling of the eyes: there was, however, still loss of consciousness during the attacks, and a copious secretion of viscid saliva.

At 9 the next morning I found that there had been no fit for an hour and a half, and that there had been the interval of an hour between the two former. The bowels, however, had not been moved; even the injection was still retained. She seemed a good deal exhausted, torpid, and roused with difficulty; pulse 68. A dose of calomel, rhubarb, and scammony, was ordered to be given immediately.

12, noon.—Has had two fits, reported

to be more severe than the former; the attendant was administering an injection of salts and senna, as there had been no passage from the bowels. This had the desired effect, and brought away copious dark-coloured offensive evacuations.

In the course of the next six hours she had two fits, much less severe, and since then there has been no return. She gradually improved in health and strength, and is now nursing her infant, although she has suffered much from severe headache, especially in the morning, and complains of loss of memory.

Such is a full account of the phenomena of this case: I have detailed them without note or comment. It presents some interesting points for remark.

1. There is the question whether the inhalation of the ether is to be regarded as the cause of the convulsions.

On this point I have carefully abstained from offering an opinion. It may, however, be remarked, that it has now been exhibited to many thousand individuals without any injurious effect. Some surgeons, however, have observed convulsions even on the operating table, and in several patients to whom I have exhibited it without any alarming effects, I have seen convulsive twitching of the muscles of expression and of the fingers. It may perhaps be added, that it seems to be admitted that the inhalation of ether has the effect of causing congestion of the brain, while it is the opinion of the most eminent writers on the obstetric art that it operates as an exciting cause of convulsions.

"In some cases they (epileptic convulsions)" says Churchill, "are owing to the effort made during the labour pains, by which an accumulation of blood takes place in the head."* According to Dr. Ingleby, "they are often met with in persons in whom the excitability of the nervous, and subsequently the sanguiferous system, is called forth by causes apparently trivial."† "Over-fulness of the vessels of the head seems to be the most frequent proximate cause of the complaint," says Dr. Davis.‡ "Women in labour, who have great swelling or fulness of the neck, joined with enlarge-

* Diseases of Pregnancy and Childbed, p. 165.

† Facts and Cases in Obstetric Medicine, p. 5.

‡ Obstetric Medicine, ii. 1024.

ment of the features of the face and a staring or protrusion of the eyes, accompanied with an irresistible disposition to sleep, often fall into convulsions."* "Puerperal convulsions arise," says Merriman, "from general plethora."† "The impediment offered to the passage of the blood through the aorta and large vessels," observes Deleurye, "produces such changes in the circulation and innervation that it is not surprising that it should give rise to congestion and irritation of the brain."‡

2. But admitting that the ether caused the convulsions, was there anything in the way in which it was exhibited to account for this? We think a good deal might be said upon this subject. The ether was not strong, neither perhaps pure, and the patient never was decidedly under its influence. My own experience would lead me fully to concur in the opinion of Professor Simpson, that the more quickly and completely the patient is brought under the influence of the ether the less chance there is of any injurious consequences resulting from it.

3. In how far ought the fact of the previous inhalation of ether to have been allowed to modify the treatment?

I have already stated the reasons which led me to dismiss all consideration of the probable effect of the ether, and to treat the disease as a simple case of convulsions. Indeed, even were it admitted that the ether did directly cause the convulsions, it would be a question how far their treatment was to be left to any antidote, supposing us to be in the possession of one. While an acrid poison is in the stomach we may neutralize it with antidotes, if we possess them, but after it has produced its usual effects, ought not these to be treated on those general principles which would guide our management of them whatever might be the cause of their origin? So, with regard to this case if distinctly proved to arise from the inhalation of ether, does the cerebral congestion arising from that, and its consequence, convulsions, require a different management from cerebral congestion which can be distinctly traced to some other cause?

Edinburgh, May 1847.

MISCELLANEA MEDICA.

By ROBERT DICK, M.D.

[THE following miscellaneous observations, made in the course of general and professional reading, are, several of them, purposely speculative and suggestive.]

1. To a drachm of urine, pale, acid, and of specific gravity 1.013,—which did not coagulate or any way change in appearance, on strong nitric acid being added to it, or on heat being applied,—I threw in a grain of moist sugar; then added about ten drops of liquor potassæ, and heated to ebullition. The deepening of shade was extremely slight, but many detached turbid clouds appeared; the urine in which these floated continuing perfectly transparent, though of a faint greenish-brown hue. It not unfrequently happens that urine, heated along with liquor potassæ, assumes a brown tint, though there is no sugar in it. The liquor potassæ, though kept in a white glass bottle, was sufficiently pure*.

2. It is a singular fact, noticed by Blumenbach, that the hedgehog can eat of cantharides in great quantity, and with impunity. There is a bird in the middle or northern part of British India (its name escapes my recollection) that feeds on the berry or nut vomica. And the writer has elsewhere noticed,† as a subject of great interest, and capable of furnishing, when duly investigated, important dietetic, therapeutic, and pathological light, the fact that goats and sheep browse harmlessly on hemlock: horses suffer only slightly from its use; while the cow, the wolf, and the dog, perish from a comparatively small quantity of it.

3. Mr. White, of Selborne, the celebrated naturalist, had a favourite horse, whose "wind" was affected. He kept water from it for 21 days, by which the dyspnœa was almost removed, and the desire for drink almost wholly subsided. The horse was turned out to grass every night, and its health was excellent.

4. The gastric fluids of graminivorous and carnivorous feeders, with one stomach, have an acid reaction; in omnivori they are neutral; in rumi-

* See a paper by Dr. Rees, in our last volume, p. 653.—ED. GAZ.

† In a series of cases now being published in the *Lancet*.

* Dewman, vol. ii. 373.

† *Diff. Part.*, p. 836.

‡ *Art des Accouch.* p. 136.

nating animals, with four stomachs, alkaline. These facts suggest important dietetic and therapeutic rules and inductions.

5. It is both of physiological and humane interest to be known that the life of eels is speedily extinguished by water at a temperature of 140° Fah. Mr. Jesse, the naturalist, alleges that such water more speedily destroys them than even immersion in ether.

The tenacity of life of some of the cold-blooded animals is, indeed, astonishing. Some years ago, in a valley in the Italian Alps, I killed (as I supposed) a lizard with one or two severe blows of a stick on the head, and then, carrying it to the village apothecary, saw him immerse it in alcohol; yet for many hours afterwards it gave signs of vitality, by convulsive movements of the limbs, though, as I hope and believe, sensation had long ceased.

If a digression may be allowed, the writer would take this occasion to allude to the wantonness and uselessness of the vivisections of many physiologists. The physiologists of this country are, with an exception or two, less amenable to the charge than those on the Continent. I have not only no scruple, but I consider it a duty, to declare my conviction that many of Magendie's experiments are useless, barbarous, and disgraceful; and I conscientiously allege, that I would not purchase his fame, were it a thousand times greater than it is, at the expense to humanity which he incurred for it. His celebrated experiment as to the part the stomach plays in vomiting,—of what practical use was it, and did it add an iota to our previous information, or modify, in aught, our previous opinions? No! In consequence of it we have not changed in the most trifling degree the use or the kinds of emetics. We knew before that the stomach was muscular and contractile, and that, at the moment of emesis, the abdominal muscles contracted violently, and Magendie's experiments, in no important or practical particular, augment or alter our knowledge. This is but a specimen of the value of many of his alleged observations and discoveries. Many are idle,—many revolting. These are the writer's private opinions, and he may be allowed to express them, however much the reader may differ from him.

6. Without at all seeking to question the ingenuity, accuracy, and importance of the late chemical researches of Liebig and others, into the nature and ultimate uses of diet, we may be allowed to observe, that, practically, the results which, according to their theories, ought to be witnessed, are far from being so universally.

In the Pampas of South America there is a numerous race who for weeks, months, and even years, eat nothing but nitrogenous food, without any intermixture of respiratory or calorifiant. These are the Gauchos—men who not only are of the most vigorous and active habits, but are, perhaps, the healthiest men the world. Their solid aliment consists exclusively of dried cow-flesh: their drink is water: they use no bread or vegetables. So much, then, for an example of human beings living, and living in full health, on a diet exclusively nitrogenous.

Captain Abbott, also, in his Travels from Heraut to Khiva, informs us that the Kurrauks, a tribe of Tartars, live in summer "almost solely upon the milk of their camels, mares, and sheep, without bread or vegetables, knowing only at long intervals the luxury of flesh; but, as the winter pasture can furnish but a scanty supply of milk, they kill, at the commencement of winter, all their old camels, horses, and sheep, and salt them, as a winter store. *These are eaten without any accompaniment of bread or vegetable.*"—Vol. ii. Appendix, pp. 45-6. Yet these are among the healthiest and hardiest of our species.

Now, for an example of an opposite kind, we might look no further, for illustration, than Ireland, where millions of men have lived, and lived in robustness, on an aliment almost wholly, if not wholly, destitute of nitrogenous principles, and certainly altogether wanting in formed fibrin. In India, and in China, large masses live, almost as much from choice as from necessity, on rice, which they prefer to every other species of grain, not excepting wheat. These facts are practically at variance with Liebig's theory and the alleged necessity of a mixed diet, and make it probable, if not certain, that the death or disease which has followed the sudden change from a mixed diet to one exclusively animal

or exclusively vegetable, has been rather due to the abruptness of the change, than to the change itself. By degrees, eagles have been taught to live on grain; pigeons on flesh.

The Gauchos, to whom I have made reference, do not, I believe, use even salt. This is a strange, important, and curious fact, and deserves a few moments' attention. It entitles us to start the inquiry, is the chloride of sodium, as a *separated* salt, indispensable to man? There are many weighty reasons for answering this query, however unexpectedly, in the negative!

If we follow rigorously the intimations of nature, and judge what is good and necessary by what she has provided for us, how sparing should be our use of common salt! In pure water there is none, or only the minutest quantity of it; in milk, in the grains, in vegetables, in the flesh of animals, what inconsiderable proportions of it exist! No other among animals but man systematically employs it in a separated state, yet their health is more perfect and regular than his. Even omnivorous animals, as hogs and bears, &c., whose diet most closely resembles his own, make no more use of it than others. Here are facts for reflection.

Some species of the cervine tribes, indeed, manifest a great love of common salt; and, observing lately in the rack of the graffes in the Zoological Gardens, a large glittering mass, I found, on inquiry of the keeper, that it was rock-salt, put there that the animals might lick it, which I saw them from time to time do. But other animals betray no such impatience or liking for salt, and even those now named retain their health without it.

It is a remark of the celebrated African traveller, Park, that it is people who live altogether or chiefly on vegetables, who have the strongest craving for salt; to whom, if to any, it is necessary. The children of vegetable-feeding nations in Africa sucked a piece of salt as our children do sugar. On the other hand, the Spanish Gauchos (as has been already remarked), who live exclusively on animal food, use no salt: *a priori*, we should perhaps have expected directly opposite results. I believe that many persons of slight stamen of constitution and feeble digestion induce debility and emaciation

by the use or abuse of common salt, which, acting purgatively, carries the chyme and chyle forward into the lower bowels before lacteal absorption has had time to take place.

If water were to be taken as the standard of what ought to compose the chemical qualities of our food, how neutral should this be! None of our aliment should have either an acid or alkaline reaction, or be either perceptibly saccharine or bitter. If this view be correct, and I believe it to be so essentially, what important economical and commercial, as well as dietetic, changes ought medical men to advocate in this nation, and in all nations! Sugar, which is absurdly talked of as a necessary of life, which engrosses much space and labour which might otherwise be devoted in rearing the true food of man, would be either wholly disused, or, at any rate, vastly less employed,—and this, I believe, not only without detriment, but with advantage to the health and prosperity of large masses of our species.

The above view has lately greatly influenced the writer's treatment of chronic diseases of the assimilative organs, and his prophylactic management of cases in which arthritic, nephritic, and other derangements connected with constitutional states of the fluids were threatened. The results have been most satisfactory, most conclusive; but, on this part of the subject, it is not possible to enlarge here.

7. *The esculent nest of the swallow.*—

These swallows build in long, deep, and dark caves in Sumatra and Java. It is now generally understood that the swallow which Sir Everard Home dissected was not of the species which produces the esculent nest, and that his anatomical observations were, besides, inexact. The nests most esteemed by the Chinese, and which, according to Sir George Staunton, cost their weight in silver, are white and transparent: these are taken before they are soiled by the excrement and food of the young; as is the case with an inferior species, which accordingly is dark, and intermixed with feathers, &c. Some doubts still exist as to the substance of these nests, and its origin; some say the swallows form those nests from fluid parts of the gnats and insects on which they prey; others, that they are formed from the juice of marine

weeds and foam, wrought up with the saliva of the birds. But, perhaps, the true account is, that the gelatinous substance composing the nests consists chiefly of a secretion from the parotid glands of the swallows.

These nests are used dissolved in soups, which Mr. Davis, in his late interesting account of China, represents as resembling vermicelli soup, with strips of gelatinous matter in it. Whether the nests are first dissolved and then regelatinized and mixed in the soup in strips, is not stated. The Chinese consider this soup a vast delicacy, but foreigners generally give a very different account of it; that it is considerably nutritive, however, seems probable.

I may add that some consider the matter composing these nests to be a substance intermediate between gelatine and albumen. The experiments of Dobereiner and Brande make it probable that it is of an animal nature; it is incinerated with difficulty, and contains very little ammonia.

8. *Nitrate of Potash in purulent urethral discharges.*—This salt always increases chronic purulent discharges from the urethra, often reproducing these after they had been apparently cured by cubebs, copaiba, &c. I have also repeatedly observed the neutral salts induce affections of the substance of the lungs; so that I consider the administration of saline purgatives, to persons disposed to tubercles, as highly dangerous. Where tubercles are dormant, a course of saline purgatives will, in a short time, convert them into vomice, and cause abscesses.

9. *Obesity.*—This condition, prized by Egyptian females, they seek to produce by (horresco referens) a diet of mashed beetles.

10. *Plato's medical aphorisms.*—It is not perhaps generally known that this celebrated philosopher seems to have paid no small attention to medicine and physiology, and to have attained very accurate practical notions on these subjects. I have selected the following out of a variety of his views and aphorisms on health and disease; and I doubt not they will be found interesting by many readers. In some points he seems to have anticipated modern discovery.

1. The principal cause of disease consists in an "assymetry," i. e. re-

dundance or deficiency, or in chemical alterations of the principles of the blood.

2. An error in the first concoction (first process of digestion) is never cured in the second.

3. Plethora, even without morbid change in the quality of the blood, is dangerous, because nature *cannot wield it*; [an extremely expressive phrase.]

4. Diet should be simple; to use his own words, ἀπλὴ οὐ πολυποικίλος.

5. Many diseases, provoked by medicines, are cured by a diet regulated in quantity and quality.

6. The more medicines are con-natural, that is, the more in their nature and action they resemble physiological action, the better.

7. The best laxative is gymnastic exercise.

8. Diseases long contracted are better kept than cured.

9. Whoever endeavours to hasten the cure of disease before it has run its appointed course, produces great out of small, and many out of few, diseases.

10. Simple medicines, such as we call kitchen physic, are best.

11. Physicians ought not to use unknown remedies when known ones are at hand.

12. As even diseases, in their constitution, have something of nature, we ought not to use medicines unless necessary, lest we exasperate disease.

13. Physicians ought not to cure one disease by a greater.

Some of these axioms, if they may be so named, are perhaps vague and general; still they embody the chief principles both of Hygiene and of Therapeutics.

11. *Phrenology and Homoeopathy.*—Without either affirming or denying that there may not be partial truth (we certainly hold there is *no more* than partial) in these systems, we must yet wonder at, and even pity, the dogmatic confidence with which many persons maintain parts of these systems, which if not palpably groundless and visionary, are, at least, still purely hypothetical. There seems a tendency in some minds to embrace every thing that is new, irrespective of its probabilities or non-probabilities of truth. One gentleman who, a few years ago, published pamphlets to prove that what is commonly called

crime, is invariably the result of disease, has more recently printed a volume on Homœopathy, which is only useful in shewing that a person, not educated in physiology, pathology, and therapeutics, but influenced by a sort of vague and indiscriminate passion for novelty and innovation, should not meddle with medical questions. *Ne sutor ultra crepidam.* When the writer learned that the gentleman, above referred to, had printed in favour of homœopathy, he was not surprised.

Bentley Street, Manchester Square.

ON THE
TREATMENT OF PERITONITIS
BY OPIATES.

BY DR. E. SHARKEY.
St. Heller's, Jersey.

THOSE who have had much experience in the treatment of fever, well know how formidable is the occurrence of inflammation in those cases in which, from the long continuance of the disease, and the necessary treatment, the vital powers have been brought to that low ebb which totally precludes the possibility of such antiphlogistic treatment as the same symptoms, primarily occurring, would have demanded and received.

A frequent complication of this nature is peritonitis, and how generally fatal I need not say,—indeed, when it occurs with any considerable degree of intensity, and to any great extent, it is generally looked upon as a death-warrant. A case of this kind has lately occurred to me, in which I adopted, with perfect success, a mode of treatment not, as I think, sufficiently known or appreciated.

It was as follows:—December 16th, 1846. Six weeks ago, a young girl, aged 18, was attacked with fever, which set in with symptoms referable to the head; she had severe head-ache, and two or three convulsive attacks, accompanied by loss of consciousness, and followed by delirium, with severe and well-marked evening exacerbations. For these symptoms she was treated with active purgatives, followed by a blister to the nape of the neck, and was relieved. Under this treatment, the

tongue (which had not been much furred) became clean and moist, although the delirium still continued. She had diaphoresis, but the critical effort was not successful in throwing off the weight of the disorder, and this, coupled with the severe symptoms which followed, verified the unfavourable indication drawn by the old writers from the "*critica non juvenia.*" The fever had still lingered on, reducing her to a mere skeleton; the debility was excessive, but her appetite good, and she took broth and wine freely. Six months having now elapsed since she was taken ill, I was induced to hope that convalescence was about to commence, and I did not visit her for the last two days. However, on visiting her yesterday, I found a very alarming change indeed; her abdomen had become exceedingly distended, tympanitic, and exquisitely tender on pressure; she moaned continually, had distinct rigors; pulse 130, and very feeble; and she lay in a half dozing state, with the whites of her eyes partially exposed, her features quite collapsed. Here were unequivocal symptoms (as I conceived) of peritonitis; depletion was out of the question. I looked upon the case as lost,—but, as a last chance, I resolved to try the opium practice, which had been successfully adopted in some forms of the disease by Drs. Stokes, Graves, and Corrigan, of Dublin. I accordingly prescribed gr. j. Extract. Opii to be given every hour, beginning at eight o'clock, P.M.; I also ordered a large blister to the abdomen, and an enema fœtid.

On visiting her to-day at 10 P.M. I found that the treatment had succeeded beyond my expectations. She had taken twelve grains of opium in the twelve successive hours following my visit. She was free from pain; her tongue clean, but very dry; her abdomen still tympanitic and tender, but her pulse reduced. No stool or urine had been passed; she had taken wine, as usual. *She had not the least appearance of having taken any narcotic substance.*

2 P.M.—Her tongue has become moist; pulse 100. Has passed some dark-coloured urine; no stool; is free from pain; drinks vomited, together with green fluid.

7th.—Countenance improved; tongue

moister. Has taken some toast and tea greedily; her bowels have acted; passes urine; abdomen less swelled; pulse 126. Considering the rise in the pulse the result of mere debility, as the other symptoms did not correspond, I ordered broth and wine.

8th.—A restless night; stranguity complained of; pulse 120; bowels have acted, but discharge very morbid.—St. Statim. Hyd. c. Cret. gr. v. et post horas ij. Ol. Ric. ʒvi.; Tinct. Rhei, ʒij. Hypogastrium to be fomented.

9th.—Bowels have acted well; some diaphoresis has taken place; urine becoming clearer. I should have observed, that the apartment in which she sleeps is very small, and is the common dormitory of the family, five in number, and consequently very close.

11th.—Had a severe convulsive fit last night. Bowels confined; pulse 106; generally improved.

14th.—Still improving.

20th.—During two or three days past has seemed rather to retrograde, and to-day was seized with pain and swelling of the abdomen similarly to, but in a less degree than, the former attack.—Foventur abdomen. Injiciatur Enema foetid. St. Opii, gr. j. omni hora. The enema acted well, and, after two pills had been taken, she obtained relief.

22d.—Has continued free from pain, though bowels are still confined and tympanitic. Pulse 120; tongue clean, dry at tip; is perfectly rational; appetite, which has been voracious, is more natural; urine rather high-coloured.—Directed abdomen to be rubbed with Linim. Ammoniac, and bandaged with flannel; and a pill, consisting of Aloes, gr. j., Ext. Gentian, gr. ij., to be taken daily before dinner. Her convalescence proceeded slowly, and, though she seemed on the verge of phthisis, she has recovered.

That this was a case of peritonitis, the rigors, the exquisite tenderness on pressure, the swelling and tension of the abdomen, together with the character of the pulse, do not allow me to doubt; but that the inflammation was of a peculiar character its having yielded to the treatment by opium would seem also to establish. If though it should seem at first sight strange that it should have so yielded, perhaps, on looking a little

more closely into the matter, it may not appear so subversive of the received theories. There can be little question that the first link in the chain of phenomena, to which we give the name of inflammation, lies in the nervous system, which is affected either generally or locally, in a way not thoroughly understood, previously to the sanguineous determination towards the inflamed part. In the active or sthenic form, the vascular action follows so quickly on the nervous stage that a narcotic medicine (whose action appears to be in the first instance stimulant), has not time to exercise its subsequent peculiar action before the period of excitement has set in, and therefore the stimulus of the medicine, combined with the pre-existing excitement, aggravates the mischief, and the anodyne effect is entirely masked by the joint result of the two. In the asthenic form, however, the case is different; the nervous stage seems to be lengthened out, and thus it may be perhaps that the anodyne has an opportunity afforded to it of acting specifically.

Be this, however, as it may, we have a valuable fact; and facts are the staple material on which our inexact science has to operate. Whether we are warranted in applying the name of inflammation to the state described or not, it cannot be denied that the train of symptoms was one of frequent and generally fatal occurrence in fever; and if they can in other cases be as promptly met and subdued by the means employed as they were in this, they furnish a valuable weapon to us in our conflict with this formidable disease. That it was not a case of ordinary tympanitis, depending on loss of tone in the system generally, and the intestinal tunics in particular, would, I think, be shewn by the very fact of twelve grains of opium having been taken in as many successive hours without producing drowsiness or any other symptom of narcotism, except the relief of pain; in accordance with a general law of the animal economy, *that the existence of a disease gives a tolerance of an antagonist remedy, and that the two may be looked upon as each the measure of the other*; it being necessary for the neutralising of the physiological action of an energetic drug, either that there

should be exhibited some antidote, or else that there should be existing at the time of its administration some pathological condition of the system capable of masking its action.

The science of medicine is little more than a well-arranged classification of facts, but the more comprehensive its groups, the more nearly does it approach that exactness which is the desideratum in every thing pretending to the name. We are justified, therefore, in examining every fact coming before us, in order to ascertain whether it is isolated, or whether it is the expression of a series; and, if the latter, in endeavouring to expand it as far as possible. Hence, this question is not so much a dispute about a name as to some it may appear, for, if it be established that the symptoms in the case were of an inflammatory nature, we are warranted in further inquiring if there are any other varieties of low inflammation, *ex. gr.* typhoid, pneumonia, puerperal peritonitis, &c. where we might be reasonably led to expect successful results from the adoption of the same practice; and, if so, what they are, and how they are to be recognised.

St. Helier's, Jersey, May 10th, 1847.

ERGOT OF RYE IN UTERINE HÆMORRHAGE.

DR. BEATTIE has made some remarks on the value of the ergot of rye as a means of preventing hæmorrhage after delivery, in cases where there may be reason to dread its occurrence. With this view, in cases where hæmorrhage has followed the expulsion of the placenta in previous labours, or where the incomplete contraction of the uterus causes him to dread its coming on, he administers a dose of ergot immediately on the birth of the child. He conceives that the remedy acts both by lowering the action of the heart, as well as by inducing contraction of the uterus. He mentions, moreover, that he has found it of great service when administered in this way, as a means of preventing those intensely severe after-pains which some women suffer, and which opium fails to relieve. He conceives that in these cases it acts by producing a complete contraction of the uterine fibres, and thus preventing the formation of clots in the interior of the organ, by which spasmodic action is excited and kept up.—*Dr. West's Report on Midwifery, 1845-46.*

MEDICAL GAZETTE.

FRIDAY, JULY 2, 1847.

IN the last volume of this journal, we directed the attention of our readers to the progress of Medical Reform in France.* The interminable discussions to which the new measure gave rise, with the prospect that when it reached the Chamber of Peers it would undergo considerable modifications, induced us to postpone any further notices of M. de Salvandy's *Projet de Loi*, until it had acquired a shape in which it would be likely to receive the sanction of the Legislature. Since the period at which we wrote, the French medical journals have been almost weekly filled with the reports of the Chambers,—the suggestions of voluble speakers, and the crude projects and theories of all classes of medical reformers. It is not our intention to analyse these: however interesting to French medical practitioners, they would find but little favour with English readers. We shall therefore dismiss this part of the question by referring to a very excellent summary,† taken from a French periodical, of the present state of the profession in France, and the changes which the Government proposes to introduce for its better regulation. They will here be put in possession of the very different principles upon which it is proposed to legislate for the reform of the profession in the two countries.

During the discussions which have taken place in the Chambers, some important truths have been elicited which may serve for the guidance and example of that section of the

* See the numbers for March 19th and 26th, MEDICAL GAZETTE, vol. xxxix. pp. 307 and 332.
† See page 37.

Medical Reformers of Great Britain, who, while they repudiate the entire destruction of our Universities and Colleges, are advocates of reasonable alterations in their constitution. The basis of any change, to be permanent and satisfactory, must be a reduction in the number of licensing establishments,—improvements in medical education,—and a better definition of the rights and privileges of British medical practitioners. With some of those drawbacks which exist to professional advancement in this country, the French government has not had to contend: with others, which are common to the two countries, it has dealt fearlessly and openly; and we are not sorry to find that our neighbours are likely to anticipate us in experiencing the benefits of medical legislation, because we shall be in a better position to judge of the practical utility of any measure of reform which may find its way into the new Parliament. Some of the principles of the French law are wholly inapplicable to the state of the profession in England; and it is not a little singular that during these discussions in the Chambers, it has been proposed to abolish entirely the practice of electing medical officers and professors by *Concours*,—a mode of election which has been so admired by a certain class of English medical reformers, that they have expressed the strongest desire to import it into this country. The manner in which it has worked in France has not, however, turned out so satisfactorily as the advocates of the *Concours* in theory, would lead us to suppose. In the summary given at page 37, the question of its abolition is merely glanced at: but even here enough transpires to enable us to see that this electioneering practice bears a very strong resemblance to the Utopian schemes

of annual parliaments and universal suffrage in the political world! Last year, we are informed, there were *two* vacancies for the office of surgeon to the Parisian hospitals. There were only *thirty-two* candidates for the two vacant appointments; and the *Concours* to determine who were the most eligible among them, lasted for the *short* period of *five months*! But there are other and deeper defects in this system, which it shall be our purpose hereafter to expose.

We insert in another part of this number* a notice which throws a curious light upon a somewhat thriving branch of medical trading. We allude to the sale of medical practices. This document has been sent to us by a correspondent, headed, "A Caution to the Public;" but we agree with him in thinking that it contains a much more serious caution to those young members of the profession who are anxious to commence practice by purchase.

We have here an instance of the unmasking of one of those very cheap and flourishing "medical concerns," which so frequently occupy the columns of the daily journals. Dr. Curtis's circular and letter, in reply to the applicant, are worthy of study and comparison. There is a well-known publication containing advice to gentlemen in search of a horse, by *Caveat Emptor*:—this author might, we believe, make a profitable speculation by writing for the benefit of that numerous class who are constantly in search of a medical practice. A candid history of one who had run the gauntlet of agents and general dealers in this branch of "business," would furnish some curious details respecting the success which annually attends these speculations upon the folly and inexperience

of men who are eager to grasp at the most shadowy promises.

We by no means intend to include Dr. Curtis among the speculators whom we have thus denounced. The fact that he represents himself to be a venerable *ante-1815* practitioner, and that, in his letter, he quotes Latin with that jocose indifference to the rules of grammar, which invariably marks the higher order of genius, would have at once prepossessed us in his favour, even supposing that the candid statements in his letter did not furnish an excellent answer to his own circular! Besides, he fairly tells us that his *modus operandi* is *peculiar*: and so the "gentleman in search of a practice" appears to have found it, for we are informed by him, in his application to the magistrates, that Dr. Curtis had been at the "fashionable sea-bathing place" only five months, and that he had no practice to dispose of! We should spoil the circular and letter by making any quotations: they are perfect curiosities in their way, and as such are well worthy of perusal. We can only express our astonishment that any member of the profession should have allowed himself to be deceived by them, or have been led to undertake a long journey to ascertain Dr. Curtis's *modus operandi*, when the *modus* was quite palpable from the documents.

The following petition, signed by 1050 physicians and surgeons of Ireland, has been just presented to his Excellency the Lord-Lieutenant:—

"May it please your Excellency,—We, the undersigned physicians and surgeons in Ireland, beg leave respectfully to represent to your Excellency, that the members of the medical profession in Ireland are frequently called upon to perform public professional duties for the benefit of the community at large, and that the zeal and efficiency with which those duties are

discharged, together with their importance to the public welfare, eminently entitle that profession to the protection and support of the Government. It is right to draw your Excellency's attention to the fact, that statistical returns for upwards of 25 years, exhibit a fearful mortality from fever among the medical men of this country, and recent events have shown that from the same cause we have to deplore the loss of many of the best and most efficient practitioners, who contracted typhus fever in the discharge of their duties among the sick poor.

"We feel that the members of the Medical Profession have reason to complain that they sustain hardship and injustice when employed in the Public Service, as, in some instances, from the imperfection of existing laws, Medical Practitioners are denied any remuneration whatever for such services, or are constrained to accept sums utterly disproportionate to the duties they are compelled to discharge; while in other cases, where the amount of remuneration is left to the discretion of Government, or to the award of Officers in Public Departments, it is often unjustly and degradingly inadequate. We most strongly, but respectfully, protest against the amount of remuneration offered by the Board of Health to physicians and surgeons for attending Fever Hospitals during the present epidemic; as, in some instances, five shillings per day have been offered by the Board of Health for the discharge of that onerous, responsible, and dangerous duty.

"We need not enlarge on the importance and value of the services rendered to the country by the medical attendants of Fever Hospitals, neither does it seem necessary to do more than suggest that insufficient and degrading remuneration for professional services cannot fail to injuriously affect the public interests; and we confidently trust that your Excellency will take such steps as may, in your Excellency's wisdom, seem fit, to remove those grievances, and cause such remuneration to be awarded to the medical officers of Fever Hospitals and Fever Districts, as may be commensurate with the great value and importance of the duties required of them."

We trust that this properly expressed

petition will have due effect with the accomplished nobleman to whom it is addressed: there can be no doubt that the grievance complained of requires an immediate remedy. Truly may it be said, not only of Irish, but of British medical practitioners, that the amount of remuneration tendered to them for public services, is often unjustly and degradingly inadequate. Journeymen carpenters receive in wages more than, according to this document, has been awarded to physicians and surgeons for attending fever hospitals during the present epidemic,—the liberal (!) sum of *five shillings a-day* for the discharge of a most onerous, responsible, and dangerous duty!—Is it surprising, after this announcement, that medical men should occasionally prefer engaging themselves as policemen on railways? The *fons et origo mali* is the over-stocked state of the profession. Medical advice and attendance are to be had at so cheap a rate, that Boards of Health will not fail to take advantage of the injurious competition which is thereby engendered.

A limit, however, should be put to this method of procuring cheap medical advice;—and, considering the important nature of the services rendered,—the risk to which a practitioner is exposed, and the danger to the public health if the medical duties be slovenly performed,—it is only reasonable to expect that a remuneration should be fixed, which would not degrade men belonging to, and educated for, a liberal profession—to the class of journeymen labourers!

WE take the following extract, in reference to the late debate on the New Poor Law, from our contemporary the *Times*:—

“Again, the medical care of extensive districts is confided to the lowest bidder in an open competition, or to any adventurer who chooses to undertake it at a beggarly stipend fixed by the board and sanctioned by the commissioners. The medical officer cannot give proper medicine for the money. Mr. Ferrand was once told by the officer that he could save a certain poor man's life, but it would cost all his salary. Mr. Roebuck says, the law put the surgeon there, and paid him to do his duty. If he neglected his duty, *he* was to blame: *he* murdered his patient, and not the law. But does this really acquit the law? Mr. Roebuck's reply would be just as valid if the Poor Law Commission assigned the medical cure of all England to one man for £50 a year. It has no relation whatever to the facts of the case. The fact is, that the medical districts are too large, the medical officers too few and ill paid, and the poor are neglected or improperly treated. What power of ingenuity or of language can avail against the fact, and its evident relation to the New Poor Law? Mr. Roebuck makes a display of his powers by reasoning in the teeth of facts. Old women are starved to death, infants are murdered, and the sick neglected to an unprecedented extent, since the new law. It is a triumph of ingenuity to show, if possible, that the law is quite guiltless. Mr. Roebuck has a very bad case, and is proud to make the best of it. He may boast that his client deserved to be hung, and was acquitted. This may do at the Old Bailey, but is out of place in the Senate.”

It will interest many of our provincial readers to know that the medical attendance on the poor has formed a subject of serious discussion in the bill for the alteration of the law now before Parliament. We confess we admire the legal ingenuity by which it is attempted to be proved, that, for any deficient medical attendance, the practitioner, and not the law, is to blame! We are told *lex neminem cogit ad impossibilia*; but we are disposed to dispute this position in reference to the medical officers of Poor-law unions.

An unfortunate member of this class is expected to keep an assistant and one or more horses, to ride thirty or forty miles a day, in order to visit pauper patients scattered over a union comprising some thousands of persons who have a legal right to claim his services, and to prescribe and assist in compounding his own prescriptions; while the amount paid to him by Government falls, in many cases, considerably short of his expenditure! To call it remuneration, would be preposterous; and to blame the medical officer, in the event of his failing to perform these impossibilities, is manifestly unjust! We must expect, however, that a lawyer will take a dry legal view of the question:—the surgeon is paid (!) to do his duty; therefore he is to blame if he neglects it! The fact that duties which would occupy the time of six practitioners are assigned to one; and that, instead of receiving the pay of six, he has the bare and insufficient pittance of one, are wholly lost sight of. He is to be held to his bond, although the performance of the conditions might entail his own destruction, and the neglect of them would lead to the destruction of the poor. It will require more legal ingenuity than has yet appeared during the discussion of the new measure, to prove that in thus dealing with the medical profession and the poor, the law is carrying out those principles of equity and humanity which should characterise the jurisprudence of a country that boasts of its position in the van of civilisation.

SECRETION OF TEARS IN INFANTS.

It is a curious fact, which is yet unexplained, that very young infants never shed tears when they cry. When once this secretion is established, it may cease during the course of a disease: and children then cry without shedding any tears. Trousseau regards this circumstance, when it occurs, as one of bad omen.—*Ann. de Soc. Med. de Flandre.*

Reviews.

Observations on the Connexion between Famine and Fever in Ireland, and elsewhere. By HENRY KENNEDY, A.B. M.B. T.C.D. &c. 8vo. pp. 50. Hodges and Smith, Dublin, 1847.

A few months since, we reviewed an able pamphlet by Dr. Corrigan, in which that physician maintained that famine and fever occur in Ireland in the relation of cause and effect. The writer of the present essay considers that the views of Dr. Corrigan on this subject are, to say the least of them, open to doubt; and his object in publishing these remarks is to prove that the opinions in question will have to be materially modified before they can be received. "Famine," says Dr. Corrigan, "(including deficient or unwholesome food,) is the paramount cause of the epidemic fevers of Ireland." And again, "If there be no famine there will be no fever; and if active and timely exertion be made to afford sufficient employment and wages to our people, I believe there will be neither famine nor fever." In opposition to this statement, Dr. Kennedy proceeds to cite facts which he regards as leading to the inference "that epidemic diseases, whatever be their causes, do not necessarily require famine as one of them,"—a conclusion which, we apprehend, neither Dr. Corrigan nor any other physician would ever dream of gainsaying. He then proceeds to shew that some widespread epidemic diseases, including the plague, typhus, and yellow-fever, have raged at a period when there existed abundance of food. And, secondly, that typhus fever has repeatedly originated under circumstances which entirely preclude the possibility of famine having any thing whatever to do with the matter. Farther than this, he brings forward a certain amount of historical evidence which tends to the conclusion that the excessive use of food has occasionally been followed by epidemic disease; and he also adduces similar evidence to shew that famine may exist without being followed by fever, and that consequently it cannot have that great influence in the production of the

disease which some have attributed to it.

The above remarks are adduced from the history of epidemic diseases generally, and not from that of similar maladies as occurring in Ireland particularly; the author, however, considers that Ireland presents no peculiarities which would entitle it, in a matter of this sort, to a separate consideration; and that the great and leading phenomena which attend, or, at least, appear to attend, on the production of epidemic diseases in Ireland, do not differ from those observed in other countries of Europe; and *vice versa*. In support of these opinions, the author then enters into an elaborate investigation of the presumed influence which scarcity of food has exercised in the production of epidemic diseases in Ireland, from the year 549, to the present time. In this investigation he has, of course, been compelled to go over much of the historical evidence already adduced by Dr. Corrigan, and in doing this he has, in many instances, been constrained to admit that famine has appeared as the immediate precursor and as the imputed cause of fever. In other cases, the author considers that Dr. Corrigan has not made sufficient investigation into the relation which appeared to exist between scarcity and disease in the several years, and that, consequently, mistakes have arisen which give a very erroneous view of the case. We shall not, of course, attempt to decide between the conflicting opinions which the perusal of the same historical statements have led the two authors to form; to do so it would be necessary to enter into a very long and careful investigation of the records of the various periods. Where, however, we find Dr. Corrigan expressly stating that during the years 1730-31 distress prevailed in Ireland, we certainly feel disposed to receive the negative statement of Dr. Kennedy, that he finds no notice of any want existing in those years,—as the weaker evidence of the two. Still, our author shews that scarcity has been known to exist in Ireland, during a very long period, before fever has appeared; that fever has not ceased upon the occurrence of plentiful crops subsequently to the prevalence of famine; and, also, that a proportion does not

always exist between the degree of famine and the severity of the accompanying or ensuing fever. Furthermore, the facts which he adduces prove that, on certain occasions, there has been observed considerable increase in fever before famine has shewn itself in the country. An extract from the concluding portion of his essay will afford an insight into the remainder of the author's opinions with regard to this subject.

"1. That, with our present knowledge, we are not justified in attributing other results to the use of bad or deficient food, than that, in the first instance, it injures the health, by weakening the bodily frame, and, if pushed further, will cause death from pure starvation.

"2. That in the first degree, bad or deficient food predisposes to the engendering of several diseases; fever amongst the rest.

"3. That should fever exist, and famine with it, the latter will aggravate the former, just as a very inclement season, or want of fuel or clothing, will do.

"4. That the proper way to account for the frequent occurrence of famine and fever at the same time, is to consider them as the offspring of one common cause.

"5. That no other theory will account for all the facts of the case.

"6. That this common cause, known to authors under the name of an "endemic constitution," is shewn, usually, by a general increase in sickness and mortality; by the occurrence of epidemics amongst the lower animals; by the destruction of vegetable life; by a sudden increase in some of the specific contagions, as small-pox; by marked atmospheric changes; and when this general cause, whatever it be, is very powerful, by the rapid decay of substances, such as silk, cotton, &c. &c.

"7. That we are still ignorant of what the paramount cause and spreading of epidemic diseases, including fevers, depend upon." (p. 00.)

It is probable that here, as in nearly the whole of the tedious discussions which have from time to time arisen respecting the nature and causes of fever, the truth is, in great measure, obscured by the narrowness and exclusiveness of the views adopted by the two contending parties. It seems to be very certain that epidemic and endemic fevers of the most severe character may arise, in Ireland and elsewhere, quite independently of the existence of local or general scarcity of food: still it appears to be undeniable

that the depression of the mental and physical energies, the squalor, neglect, and exposure, which necessarily attend the prevalence of famine, are the most influential causes of typhoid disease. It is true that many of the tropical fevers, and not a few of those which occur in our own climate, are demonstrably principally due to atmospheric influences; and it is undeniable that the same causes which lead to the destruction or impairment of vegetable life, and, consequently, to famine, may also directly tend to give origin to pestilential disease. Still it is known that fever of the most characteristically typhoid nature may be produced (at times when no fault can be discovered in the general atmosphere) by want, neglect, deficient ventilation, and noxious exhalations, and that the disease thus engendered may be propagated to individuals who have not previously been subject to those injurious influences. We cannot, however, believe that Dr. Corrigan ever intended to maintain that fever cannot occur, either in Ireland or elsewhere, independently of famine, and we do not consider that Dr. Kennedy has at all succeeded in disproving the opinion of that gentleman, that famine has been the "paramount" or principal cause of most of the epidemic fevers which have from time to time appeared in Ireland. We think that Dr. Corrigan's assumption that, "if there be no famine there will be no fever," will scarcely stand the test of investigation; but all will be disposed to join in that writer's judicious and humane suggestion of the necessity of attempting to prevent or limit the ravages of these two dire evils by the timely supply of sufficient employment and wages to the menaced people.

The Physiological Anatomy and Physiology of Man. By R. B. TODD, M.D.F.R.S. and WILLIAM BOWMAN, F.R.S. Part 3rd. pp. 200. London: Parker, 1847.

THE third part of this excellent work now before us treats, in nine chapters, of the organs of sense, smell, vision, and hearing; of the encephalic nerves, the sympathetic nerve, and the organs concerned in the function of digestion. One of its great merits is that it strictly corresponds to its title:—

the physiological anatomy, as developed by the microscope, and the physiology of the human body, are throughout the prominent objects of the treatise. It cannot fail to recommend itself to students by the clearness of description, and the accuracy of the illustrations met with in every chapter: and we do not hesitate to express our opinion that it supplies a void which has hitherto existed between works specially devoted to anatomy and physiology. The engravings represent not only those parts of anatomy which can be easily traced with the scalpel, and which really need no other illustration than that met with in the dissecting room; but by the aid of the microscope, and of sundry chemical appliances, they carry him into the intimate structure of organs, and lay bare to the eye the most minute subdivisions of vessels and nerves.

The chapters are not encumbered with unnecessary details; and those parts of physics which are required for the understanding of the physiology of the senses, are concisely given in the form of notes. We here make a few selections on some subjects of physiological interest.

Myopia.—"It seems probable that the state of myopia may be acquired by the habit of looking intently at small and near objects, and that the common practice of remedying the inconvenience by the use of concave glasses tends to increase the defect. Frequent exercise of the eyes on remote objects has no doubt the effect of making them far sighted. It is a common error to say that myopia disappears naturally in advanced life." (p. 49.)

The perfection of the eye as an optical instrument is well illustrated by the following remark on

The office of the iris.—"One important office of the iris is to prevent the passage of the rays through the circumferential part of the lens, and thus to obviate that indistinctness of vision which would arise from *spherical aberration*, or that unequal refraction which results from the difference in the angle of incidence of the several rays on a curved surface. In this respect it resembles the diaphragms used in optical instruments. By its position close to the surface of the principal lens,—and behind or within the first one by which the light is converged, viz. the concavo-convex one formed by the cornea and aqueous humor,—it is adapted to admit the greatest quantity of light to the lens,

consistently with the correction of the physical aberration." (p. 50.)

Those who have had occasion to watch the proceedings of an artist who employs a camera obscura, will fully appreciate the truth of this physiological explanation.

Duration of impressions on the retina.—"By ascertaining the speed necessary for completing a luminous circle of a certain size, we can estimate the duration of the impression; and by augmenting or diminishing the brilliancy of the ignited point, (in the twirling of a lighted stick,) its duration is found to be affected. A momentary impression of moderate intensity continues for a fraction (according to D'Arcy, an eighth part) of a second. But if the impression be made for a considerable time on any one point of the retina, it endures for a longer period after the object is removed. It is owing to the retentive power of the retina that the rapid and involuntary act of winking does not interfere with continuous vision of surrounding objects." (p. 53.)

Seat of perfect vision.—"Perhaps it is only in or very near the axis of vision that sight can be said to be perfect. The existence of the yellow spot of Soemmerring at that point, continues a riddle which the most attentive examination of its anatomy has not yet solved. And from the absence of this spot in almost all the lower animals, we are led to doubt its importance to perfect vision." (p. 55.)

On the much controverted question of the inverted image on the retina, we have the following remarks:—

"Correct vision with an inverted image—visual idea of direction.—The image on the retina being the reverse of the picture of external objects seen by the mind, it is manifest that in some way or other the inversion is counteracted ere the impression becomes a sensation. It is conceivable that this correction may take place in the optic nerve or brain, but it is far more probable that it occurs in the retina. It is certain that we do not see the image as it exists on the retina, or its inversion would not have remained so long unknown; we rather see *out of or from the retina*. The simple experiment of pressing with the finger on the retina through the ocular tunics, and thus eliciting a luminous appearance on the opposite side, seems to prove that the apparent projection of a luminosity in a direction perpendicular to the point stimulated, is a necessary part of the excitability of the retina. If this be granted as an ultimate fact, it will explain why an inverted image, formed on a concave retina, shews objects in the same position as they are shewn by the

other lenses which receive direct impressions from them, particularly touch.

"It has been supposed by Müller and Volkmann, that objects do really appear inverted; but they argue, that as long as all do so, even visible parts of our own bodies, there is no need of a correction. But this will not explain the perfect harmony existing between impressions conveyed through the senses of hearing and touch, with those derived from sight. Sounds are appreciated, and tactile impressions are felt, as proceeding from a particular direction, as regards the body,—our several organs are conceived as existing in a particular relative position, altogether independently of vision; and vision accords entirely, and at once, with these senses in the determination of locality, without the necessity of an education of the sense, such as a reversed impression on the mind through the eye would require.

"Were the eye and the whole body fixed, we should still have a knowledge of the relative position of visible objects, and, of course, of the direction in which each point of their surface was placed, as regards the organ of sense; and, as rays coming from objects in the same direction, as regards the body, would then always fall on the same part of the retina, we might conclude that each part of that membrane had the power of conveying the notion of position in one direction only as regards the body. But the eye being a very moveable organ, we are enabled to make the image of a stationary object travel successively over a large tract of the retina without the object appearing to move, since we are conscious, through the muscular sense, of the motion in our own eye. The visual idea of direction in regard to the body, therefore, does not depend on the image falling on a particular point of the retina, but, in a great measure, on the muscular sense, in conjunction with that quality of the excitability of the retina already spoken of.

"It is proper also to mention that the limits of the field of vision, formed by certain parts of the face, are a standard to which the mind refers in estimating the position of visible objects. The outline of the field remains the same through all movements of the eye. The motions of the head or body can alone bring new objects into the field; and the muscular sense thus still further contributes to enhance the usefulness of the sense of vision." (p. 57).

We must leave the senses, and pass to subjects of a more material kind, for the sake of those of our readers who may desire to know what limits should be set to the gastronomic propensities of the *genus homo*.

"It is plain, then, that a daily amount of

food, varying in quantity between 35 and 25 ounces, is sufficient to maintain health, but of this a fourth or fifth ought to be animal food, especially when bodily exertion is being used. An amount greater than this is prejudicial, as affording material for the formation of new compounds, which serve only as *materies morbi* that may contaminate various tissues or organs, and impair their physical and vital properties. A lesser quantity, on the other hand, makes a poor blood, weakens the cohesive power of its elements, as well as the attractive force of the tissues; and thus, in this latter case, *materies morbi* may be generated from the decomposition or the imperfect composition of the elements of the blood, and the tissues will suffer, partly from not appropriating a sufficient quantity of the nutritious elements contained in the blood, and partly from the inferior quality of those elements themselves, which are probably also contaminated by some new compound." (p. 157).

We shall conclude our notice of this work by stating, that, if the concluding part, which is promised early, be of equal merit with the three which have been already issued, it will form, when completed, a most useful addition to the library of every student and practitioner who sets a value upon the scientific knowledge of his profession.

Proceedings of Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

June 8.

J. M. ARNOTT, Esq. F.R.S. PRESIDENT.

On the Inflammatory Diseases of the Kidney. By GEORGE JOHNSON, M.D., Medical Tutor in King's College, and Physician to the Public Dispensary, Lincoln's Inn. [Presented by R. B. TOWN, M.D. F.R.S. &c.]

THE author arranged the inflammatory disease of the kidney into two classes, the first class including those diseases which result from some local cause, such as the mechanical irritation of a calculus, &c.; and the second class including the diseases which originate in some abnormal condition of the blood. The present communication refers to the latter class only. The form of disease first treated of was that which occurs in connexion with scarlatina. The anatomical changes occur chiefly in the convoluted portions of the urinary tubes, and consist in an abundant formation of epithelial cells. The Malpighian bodies and the straight tubes of the pyramids are primarily un-

affected. The author proposed to call this form of disease "acute desquamative nephritis," the reported cases of the same form of disease occurring unconnected with scarlatina. He next spoke of the same disease occurring in a chronic form—"chronic desquamative nephritis." He described minutely the changes which the epithelial cells and the tubes undergo, and mentioned several facts which appear to him abundantly sufficient to prove that the cysts which are often observed in these cases are dilatations of the basement membrane of the tubes. The anatomy of this form of disease affords a satisfactory explanation of two remarkable phenomena:—1st. The great wasting and contraction of the kidney; and 2d. The copious secretion of pale urine, of low specific gravity, which is frequently observed in these cases. The author next spoke of the condition of kidney produced by such substances as oil of turpentine or cantharides. In these cases the irritation appears to be confined to the Malpighian bodies, and produces hæmorrhage from their delicate vessels. The epithelial cells of the tubes are unaffected, and the author proposes the term "hæmorrhagic nephritis," to distinguish this form of disease from cases of desquamative nephritis." The disease next spoken of was "suppurative nephritis." The author reported a case in which this disease appeared to have been produced by an unhealthy carbuncular inflammation of the cellular tissue of the neck being determined to the kidneys by the intemperate use of alcoholic drinks. The author then spoke of fatty degeneration of the kidney, and described two forms of the disease, the one being simple fatty degeneration, and the other being complicated with a nephritic condition. All the forms of disease alluded to may be detected and distinguished with ease and certainty by a microscopical examination of the urine; and the information thus acquired is of as much importance, with reference to prognosis and treatment, as any information derived from a physical examination of the chest in cases of pulmonary and cardiac disease. The author gave directions as to the best mode of making a microscopical examination of the urine, and concluded by some observations tending to show the inutility and danger of administering diuretic medicines in most cases of renal disease.

On Subacute Inflammation of the Kidney.

By JOHN SIMON, F.R.S. Assistant-Surgeon to King's College Hospital, and Demonstrator of Anatomy in King's College, London.

The chief points in Mr. Simon's paper were the following:—He first gave an exacter definition of the nature of glandular

inflammation generally, showing how often no interstitial deposit of organizable material attends it, and, on the contrary, how much more constantly it evinces itself in modifying the physical properties of the secretion, by admixture of albuminous material, or otherwise. He stated, that in the more complicated glands, many of the most obvious structural changes followed, and were caused by the lowest amount of inflammatory action; the secretion becoming first disordered, and then reacting, often mechanically, on the structure of the organ. He illustrated this in the kidney, showing its subacute inflammation to commence as an epithelial disease, and to produce the final destruction of the organ, in a great degree, mechanically. After citing the causes of the disease, (among which he mentioned various fevers besides scarlatina,) he proceeded to describe the overabundant formation of modified epithelium, which is the first stage of the disease; stating that the tubes were bunged by it so as to be totally impervious, and were often so distended, that their limitary membrane would give way, and suffer its contents to be effused amid the surrounding blood-vessels. The microscopical examination of the urine would often show the specific cause of the disease—biliary matter, or oxalate of lime, or lithic acid, or fat, entangled or included by those well-known fibrinous casts of the tubules discovered by Dr. Franz Simon. These casts, and the more or less modified epithelium, were signs of renal irritation simply, the specific diagnosis being in each case furnished by additional matters which accompany their escape. He described the final shrinking and atrophy of the kidney as dependent on the gradual absorption of spoiled tissues—not to the contraction of effused lymph; and explained away the appearances which had led many observers to ascribe an unreal influence to the latter cause. He reviewed the subject of "Bright's disease," and stated his opinion, that in all instances of disease to which that name is applied, subacute inflammation plays an important part, and produces its characteristic symptoms. It had appeared to him, that this inflammation was always grafted on the fatty degeneration, so well described by Dr. Johnson. He recommended that the name of "Bright's disease" should be discontinued; that the term "scrofulous degeneration" should be used for one form, and the common one of inflammation for the other. The former had not appeared to him to lead to contraction of the kidney, which he had found mainly in the other class of cases. In tracing the inflammatory changes, he gave an account of the formation of renal cysts, believing their develop-

ment to be an almost essential part of the inflammatory process; his theory of them being, that when the tubes have been ruptured, these cysts are developed from the effused epithelial germs which (by the destruction of the limitary membrane) are brought into unnatural circumstances. They had appeared to him an extravagant overgrowth of common nucleated cells, down to the size of which he had repeatedly traced them. From this remarkable smallness in which they commence, it seemed impossible that they could arise from the tubes; nor had he ever seen any such connexion. In a few remarks on treatment, he expressed a strong opinion against diuretics, and much reliance in the sweating-bath. He spoke of the disease as one of almost incredible frequency, and said, that in a vast majority of cases the disease had been overlooked during life, while its traces in the dead body were such as might easily elude observation.

Dr. C. B. WILLIAMS had great pleasure in concurring in nearly all the opinions expressed in both papers. He could not agree, however, with the authors in attributing the disease so universally to inflammation as they had done, for besides the cases of fatty degeneration of the kidney, described by Dr. Johnson in a former paper, there were numerous other cases of albuminuria, in which there was no inflammation,—cases arising merely from congestion, on account of obstructed circulation through the heart and lungs, and which were entirely relieved with the obstruction which caused the symptoms.

Mr. SIMON said he and Dr. Johnson had not included in their papers cases of mere congestive albuminuria, but only those in which the increased number and altered state of epithelial scales in the urine showed an increased and perverted state of the secretory functions of the organ.

There was some discussion between Mr. Simon and Dr. Johnson concerning the origin of the watery cysts of diseased kidneys, in which each defended the opinion expressed in his paper.

ROYAL COLLEGE OF CHEMISTRY.

Wednesday, June 23d, 1847.

At the meeting of the members of the College on the 23d ult., a lecture was delivered by Mr. Noad on Sulphuric Acid, and its important applications in the Arts and in Agriculture. Mr. Noad commenced by calling the attention of the members to the remarkable properties of sulphur, the states in which it is found in nature, and the various acid combinations which it forms with oxygen, as well as the uses to which

these compounds are put. The manufacture of sulphuric acid from a mixture of sulphur and nitre was then explained; and the various chemical theories that have been devised to account for the changes which take place were described. The manufacturing process was illustrated by the admixture of the anhydrous nitrous acid and sulphurous acid vapours in a large glass vessel; and in the course of a few minutes the interior was lined with a dense white crystalline solid, which by contact with water was resolved into sulphuric acid and deutoxide of nitrogen.

The extent of this manufacture in England is very great. An impolitic attempt had been lately made by the Government of Naples to restrict the supply of sulphur; and the ingenuity of British manufacturers had led them to try numerous experiments in order to determine whether sulphur could not be easily and inexpensively extracted from the sulphates and sulphurets found in this country. This plan would doubtless have succeeded but for the speedy abolition of the monopoly.

The singular properties of sulphuric acid in carbonizing organic substances, and in producing intense heat by admixture with water, were then illustrated by various experiments.

After the lecture, Mr. Alfred Taylor presented to the meeting a Daguerriotype copy of an ancient Sepulchral brass, representing a priest in his robes. The brass, of which this was a reduced copy, was that of Peter de Lacy, who was rector of Northfleet, Kent, in the reign of Edward III. (A.D. 1375.) The figure of the priest is between five and six feet in length: a copy of this was taken on paper in 1844 by the mechanical process of rubbing. This drawing was recently suspended before an excellent camera, lent by Professor Highschool for the occasion, and the figure was transferred to a silver plate. The Daguerriotype copy is about three inches in length, and so perfect that the minutest portions of the dress are distinctly brought out. Thus, then, by the combination of two processes of modern discovery—the one mechanical and the other chemical, it is possible to perpetuate the true appearance of these ancient Sepulchral monuments by causing the figures to delineate themselves. No engraving can attain their delicacy or truth.

HARVEIAN ORATION.

THIS oration was delivered at the Royal College of Physicians on Saturday last, by Dr. Southey.

Correspondence.

ON THE PALLIATIVE EFFECT OF THE INHALATION OF ETHER ON A PATIENT SUFFERING FROM AN UNUSUAL IRRITABILITY OF THE SPINAL NERVOUS CENTRES.

H. S., of Barrow, Lincolnshire, æt. 29, has been confined to her bed-room nearly six years, by various hysterical symptoms connected with great irritability of the spinal marrow in the dorsal and lumbar regions. She has occasional attacks of clonic spasms of the trunk, upper and lower extremities, which continue unabated for a variable period. Her intellect is not disordered during their continuance. Her fingers and toes are permanently distorted by the repetition of these attacks,—perhaps, also, by the neglected use of them during the intermissions.

On the 18th inst. I was called to her by her friends, who stated she was totally worn out by an unusually protracted attack, and that all sorts of antispasmodics had been given without effect. On arriving, I found her pale and harassed, laid across her bed, and certainly distressing to look at; her body, arms, and legs were in constant motion, her body moving to and fro, her arms and legs beating the bed. Her friends asserted that she had been positively so affected, without one perfect intermission, for four days and nights. I applied ether inhalation, and, after a minute, her arms were still; in another she was at rest—all the spasmodic actions ceased. I allowed her to respire the ether a few moments longer, which caused a sleep to come over her. They adjusted her in her bed, and she slept quietly for nearly eight hours. When she awoke, the convulsions did not return.

On the 21st inst. another attack came on: it had lasted twenty-four hours before they sent. I again applied the ether, with the perfect result of arresting the convulsions in two minutes. This time the patient chattered awhile under the influence of the ether, very much like a patient in puerperal mania, but she soon lapsed into a quiet sleep, when I left her.

I have seen her this morning: she is quite at rest, is not suffering any ill effects from the ether, and has had a very good night.

I am, sir,

Your obedient servant,

W. WILKINSON, M.R.C.S.E.

Barton, Lincolnshire.

June 23, 1847.

** It will be desirable to know the result of this treatment, as any judgment based upon a short period of observation would be premature.

COMPARATIVE MORTALITY OF LONDON
AND EDINBURGH.

SIR,—In previous numbers of your influential journal, you did me the favour to insert several communications of mine respecting the mortality of England, and on questions therewith connected. Encouraged by such kindness towards an unknown correspondent, I again resume the pen, in order to point out the great difference observed in the mortality of Edinburgh, during the month of May last, compared with that of London during the same period; as shewn by the metropolitan tables published by the Registrar-General, and the monthly report just issued by Dr. Stark, under the authority of the town council of Edinburgh. From this it appears that the modern Athens is by no means so healthy a locality as Babylon the great. According to Dr. Stark's Report, 628 deaths occurred in Edinburgh and Leith during last May, which, when calculated with reference to the population of these towns, makes an annual average of 4.41 per cent., or one death in 23.83 persons living. On the other hand, in London, the deaths during the same month of May amounted to 4,136, which, if also calculated with reference to the metropolitan population, makes the annual average of deaths in London 2.47 per cent., or at the rate of one death in 40.4 persons living. Speaking generally, we may therefore say, that the mortality of Edinburgh was nearly double that of London during the period referred to in this communication; and, although, I do not now give the data proving such an opinion, I believe it will be found, that during all seasons, the northern metropolis is by no means so salubrious a residence as the overgrown and wonderful capital of England; notwithstanding the many causes inimical to health, which must always prevail in a place where such myriads of human beings are congregated together, and of whom numbers are every morning uncertain as to their means of existence; to say nothing of the thousands of strangers daily flocking into its densely crowded streets and confined habitations.

As to the causes chiefly influencing the greater mortality of Edinburgh, compared with that of London, it is difficult to give a satisfactory explanation, without making this communication too long for your valuable columns; nevertheless, I cannot help saying, independently of other influences, which medical practitioners can well appreciate, the great consumption of oatmeal as the principal food of the lower classes in Scotland, and the quantity of whiskey too many of them unfortunately drink, materially contribute to produce disease, par-

ticularly fever, so often prevalent in that country. Another cause, tending also, I think, to make Edinburgh more insalubrious than it would otherwise prove, to the middle and higher classes, is the very general use of gas in private houses, and even in the bedrooms of the inmates, who thus breathe by day, and by night especially, an impure atmosphere,* which deteriorates the blood, debilitates the constitution, and not only produces illness, but likewise renders individuals less able to resist other causes of disease. Unwilling to discuss such subjects, as some of your readers may consider them mere matters of opinion, I would again refer to the instructive facts drawn from public documents, which authenticate the conclusion I have asserted respecting the greater insalubrity of Edinburgh, compared with London; and this is chiefly done, in the hope that the attention of the medical profession of that classical city, and its local authorities, may be directed to the points mooted, so that means may be taken to alleviate, if not to counteract, the influence producing this high rate of mortality.

Your faithful servant,

MEDICUS.

June 21st, 1847.

INFLUENCE OF THE EXCISE LAWS ON
PHARMACY.

No prescription or preparation in which spirits are an ingredient, however small the proportion, can be sent from Scotland to England without the accompaniment of an Excise permit, and a duty is leviable in some cases to double and triple the cost, as it is not on the actual quantity of spirit contained in any mixture, but on the whole quantity, that the duty is levied. Any infringement on this regulation subjects the offender to a penalty of two hundred pounds; and should any person, while going from Scotland to England, be detected in the possession, without a permit, of medicine, into the composition of which spirits have entered, he is liable to be seized and hurried off to gaol as a smuggler!—*Edinburgh News*.

* The noxious products of combustion are carbonic acid and sulphurous acid, with probably a portion of ammonia (from cyanogen), and unconsumed sulphuretted and carburetted hydrogen with naphtha vapour. It is just as important to health to carry out of a room the products of the combustion of coal-gas as of coal itself. Faraday's ingenious invention for this purpose is adopted in the new House of Lords, and is now coming into general use. A large portion of the library of the Athenæum club was destroyed by the acid vapours evolved by the combustion of gas.—ED. GAZ.]

Medical Intelligence.

PROGRESS OF MEDICAL REFORM IN FRANCE. A SUMMARY OF THE FRENCH MEDICAL BILL.

THE question of Medical Reform has made rapid progress in France within the last ten years; but it was not until the month of November last, when delegates from all the medical practitioners of the kingdom met in Paris, to the number of about 5000, and formed a Congress, that the numerous and crying abuses which existed were clearly demonstrated. The *Congrès Médical* held its sittings in the Hôtel de Ville; they were continued for fifteen days; and, before their adjournment, the Minister of Public Instruction himself consented to be present,—heard their suggestions,—and pledged himself to bring in, at the earliest opportunity, a bill to relieve the grievances of which the medical body had so long and so incessantly complained. Before we mention the leading topics embraced in the bill now under discussion, it may be useful to give a short abstract of the medical regulations at present established. They were enacted by the law of the 19th Ventôse, year XI. (10th March, 1803). According to that measure, to which additions have been made at various periods by the Council of Public Instruction, and by Royal Ordonnances, the medical body, as now constituted in France, consists of “Doctors in Medicine,” and “Officers de Santé;” the former, graduates of one of the three universities, Paris, Montpellier, or Strasburg; and the latter, an inferior grade, merely received by medical juries. A certain number of foreign graduates are also practising in France, by virtue of Royal ordonnances. All candidates for the degree of M.D. must have graduated as Bachelors of Letters and Sciences in the Sorbonne of Paris, or the Faculties of Strasburg or Montpellier. The period of their studies is four years, during which they are required to undergo five examinations, and to defend a thesis. The first examination has for its object—natural history, natural philosophy, and chemistry; the second, anatomy and physiology; the third, the theory of medicine and surgery; the fourth, materia medica and medical jurisprudence; the fifth, the practice of medicine and surgery. Of these examinations, two, the first and the fifth, are essentially practical; each student being required, for the former, to perform a minute dissection in presence of the Board of Examiners; and for the latter, to examine the patients who are presented to him in the hospitals. The thesis is written in Latin or French; the examinations are pub-

lic, and of a very stringent character. Doctors of medicine have a right to practise their profession in every part of France. The officers de santé were instituted in 1804, during the wars of the empire, at a period when there was a great dearth of medical men. Candidates for this grade are examined by a commission of three persons, called a *jury médical*, which sits in Paris, and visits the departments twice a-year. The candidate is not required to have taken literary degrees, and only undergoes three oral examinations:—The first, on anatomy; the second, on the elements of medicine; and the third on surgery and the ordinary knowledge of pharmacy (*les connaissances les plus usuelles de la pharmacie*). Officers de santé are authorized to practise only in the department in which they have been examined; they are prohibited from taking the title of doctor; but, through a curious oversight of the law, they may with impunity assume the appellation of “*médecin*,” given, in common, to doctors, officers de santé, and vétérinaires. The new bill contains provisions to remedy this abuse. Officers de santé may not perform important surgical operations, except under the surveillance of a doctor of medicine. The penalties which may be at present enforced against persons practising illegally, are, a fine of from 100 fr. to 1000 fr. against any individual practising as doctor; and a fine of from 25 fr. to 500 fr. against those practising as officers de santé. In case of a second offence, the fine may be doubled, and the offender imprisoned for a period not exceeding six months. Foreigners transgressing the above regulations are subject to the same punishments as Frenchmen. Such is the state of the medical profession under the existing system.

In the new bill, the leading points of reform relate—1. To the two classes of practitioners, doctors of medicine, and officers de santé; 2. To the repression of illegal practice; 3. To foreign physicians who desire to practise in France. The Government-plan, which has been fully adopted by the Committee of the Chamber of Peers, proposes the suppression of the officers de santé. This clause is called, in Count Beugnot’s report, *la disposition capitale de la nouvelle loi*. The congress, by an immense majority, had already demanded the suppression of this grade, which measure would, it was said, have the effect of increasing the respectability of the medical body in France, and, what is still more important, of affording more security to the lives of the inhabitants. On the second point to which we have adverted above—the illegal practice of medicine—the new law declares that any person practising the healing art without having graduated in one of the French Faculties, or without a duly

legalized authorization from the French Government, shall be liable to imprisonment for a period of not less than six months, and not exceeding two years; for the second offence, the minimum imprisonment is two years, and the maximum five years: a proposition which, it is probable, will meet with general disapprobation, and, we think, deservedly so, is one which exposes all medical men, who may incur the slightest punishment of the simple correctional police, to be deprived of their right to practise. This has been modified by the Committee, and the penalty is to be applicable only to those who transgress the following articles of the Penal Code to which we refer our readers,—viz. Arts. 316, 317, 330, 331, 333, 334, 335, 338, 349.

On the third point alluded to, namely, the practice of *foreign medical men*, it is proposed by the new law that no foreign physician can be authorised to practise in France, unless it shall have been previously decided by the Royal Council of Public Instruction, that his diploma or degree is equivalent, as an attestation of length of studies and respectability of the University which conferred it, to that granted by the French Faculties. Further, the authorisation may be restricted to a certain locality, and confined to a limited period, and is always revocable at pleasure.

It now remains for us to notice the state of medical instruction in France. The *corps enseignant*, as at present constituted, is composed—1. Of the professors of the Faculties of Medicine, who lecture on the various branches of medical science; 2. of *agrégés*, or assistant professors; and 3. of professeurs particuliers, or private medical teachers, who may be assimilated to the class of "*grinders*" in Great Britain and Ireland, and whose certificates are of no value as qualification for examination. It will thus be perceived that a class of professors of private schools, whose occupation is lucrative in England, and whose students are recognised by almost all the Universities in that country as qualified to present themselves for examination, is unknown in France. To return to the *legal* medical authorities:—The professors, twenty-four in number, are all appointed by *concours*; the Minister, however, enjoys the privilege of nominating the first professor to a newly-created chair. Thus, it is in contemplation to establish a professorship of medical literature in the Faculty of Paris, and the nomination will rest with M. de Salvandy, or his successor. The judges of the *concours* are chosen partly from the professors of the Faculty, partly from the Academy of Medicine; and the election is subject to the approval of the King, and, if such is accorded, it is confirmed by Royal ordonnance. The *agrégés*

and physicians to the hospital are also named by *concours*. The consequence of this mode of election is, that *concours* are incessantly going on. The number of candidates is sometimes very incommensurate with that of the vacancies: thus, last year there were two vacancies for the situation of surgeon to the hospitals of Paris; *there were thirty-two candidates, and the concours lasted five months!* A general impression prevails that some means must be devised to diminish the host of competitors. At present, all doctors of medicine have a right to contend for a vacant professorship, but the new law proposes to exclude all but *agrégés* from this privilege. The professor's salary is 10,000fr. (£400), whilst that of the *agrégé* is only 2,000fr. (£80.) In several provincial towns, such as Rouen, Caen, Bordeaux, &c., secondary schools are established, each of which possesses its staff of professors, whose certificates are recognised by the faculties. The organization of these provincial schools is mainly owing to the exertions and influence of M. Orfila, the distinguished Dean of the Parisian School of Medicine; and one great advantage attached to them is, that by keeping the students of their respective localities at home, they prevent their agglomeration at Paris, where their naturally peaceful and scientific pursuits are too frequently interrupted by the excitement of political struggles, or the allurements of dissipation.

One of the greatest and most glorious innovations in medical science of the present century, is the study of pathological medicine, and we must acknowledge that to the efforts of French pathologists the world is mainly indebted for the perfection of this branch of the profession. The celebrated Dupuytren bequeathed a sum of £8,000 for the creation of a chair of Morbid Anatomy. But much yet remains to be done, and the new law provides for the formation of laboratories, in the faculties and secondary schools, where the student will be forced, by frequent *post-mortem* examinations, to acquire a knowledge of the organic lesions accompanying the various diseases to which the animal system is liable. The foundation of Bourses, or gratuitous exhibitions, to be enjoyed by laureates of the universities and secondary schools, is in contemplation, and must meet with universal approbation. This establishment, in the form of prize scholarships, &c., has long existed in England. In the latter country, also, the poor receive efficient and skilful medical aid from the dispensary physicians;—in France, a similar class is proposed to be established, under the denomination of *Médecins Cantonnaires*, who must have graduated as doctors of medicine, and, in consideration of a fixed salary, will be required

afford gratuitous attendance to the poor. The class of practitioners will advantageously replace the half-educated tribe of *docteurs de santé*. A question which has given rise to much discussion, and to great diversity of opinion, relates to the creation of Medical Councils, analogous in their attributes and action to the council of discipline, which regulates the proceedings of the French bar. But it is generally supposed that the *Conseils Médicaux* will devote their exertions, almost exclusively, to the compilation of statistical documents and to public hygiene. They will, therefore, be very similar to the English councils for the improvement and salubrity of towns.

TRAFFICKING IN PROVINCIAL MEDICAL PRACTICES.

At a recent meeting of the Yarmouth Magistrates, a medical gentleman, from London, entered the Court, and said he had a charge to prefer against a party, calling himself Dr. Curtis, of the Church Plain, he having, by means of an advertisement in the *Times*, very grossly deceived him. He related the Magistrates' advice under the following circumstances:—He was a surgeon, and wanted a practice, and seeing one advertised at Yarmouth, he wrote, and, after correspondence, which he would produce, he came down, when he found that this gentleman was a quack, and had been here only about five months, and could have no practice to dispose of. His window was filled with loathsome and disgusting specimens of portions of the human frame in a state of disease, and his *modus operandi* was precisely the one adopted by members of the quack fraternity. The Mayor read the following letters, as nearly as we could report them, and hoped, at the conclusion of them, that the case might be made public.

Circular.—The general and counter practice is at Great Yarmouth, a fashionable sea-bathing place, of 30,000 inhabitants, and 40,000 during the season. The town is rapidly improving, and new streets building. (No midwifery.) The house is ten-roomed, in good repair, centrally situated, and with an avenue of trees before it. Rent and taxes only £25 a year, (worth double), and even these might be covered by letting a few rooms in summer. Average net profits from 15s. to 20s. per day, which can be doubled. It would suit even an elderly practitioner. The terms would be the same whether sold out and out, or partnership; viz. £100, either cash, or £25 down; £25 in two months; £25 in one year's time; and £25 in 1½ year's bills at maturity. There are many applications and propositions, but each shall have his chance, and no final arrangement will take

place till the applications cease. It being *bond fide*, the proprietor is determined to go on sure ground. He is 60 years of age, and an invalid; has been in practice before 1815; and he knows an instance where a medical man advertised his business, introduced an A. R. as his successor, and when the premium was to have been paid, some unforeseen occurrence prevented; the consequence was, the patients were lost, the stranger settled in the town, and, being a clever man, got a good practice for nothing. The "seller" left and was laughed at.—M. D., Post-office, Great Yarmouth.

P.S.—Any further particulars may be obtained if a respectable reference be given.

June 1, 1847.

SIR,—In reply to your favour, I beg to say that, in consequence of the high recommendation from Mr. Phillips, (applicant's father-in-law,) I hesitate not to give you the refusal of the practice alluded to, and shall be happy to afford you every means of investigation, which, as a matter of course, can only be done on a personal interview. If, therefore, it still be your intention to run down, perhaps the sooner the better, as there are several gentlemen waiting their turns, and, unsolicited, may arrive. You must understand that this is not a first-rate business; in fact there is no nobility, and very few gentry in the town, except during the bathing season. The inhabitants are ignorant, but wealthy; considerable fortunes having been made by the herring fishery. Moreover, this is one of the counties the schoolmaster forgot in his travels, or, perhaps, passed through by railway. With the nucleus I offer, a good practice may be made; but being an elderly man, and an invalid, having been in practice before 1815, I have very little visiting, and no retail nor midwifery. What little there is, fell to the share of my assistant, who has lately accepted a Union, and gone into practice in Hampshire. It ought, however, to be pushed on account of acute cases. Midwifery might be added, and a good retail, if thought proper, as there is every accommodation, and medicines here are sold exorbitantly high, from (as I understand) an agreement amongst the druggists. I am also offered a club; and, indeed, could suggest several plans whereby the profits might be augmented. "*Ituc est sapere non solum quod ante pedes modo est videre sed etiam illa quod in futuro sunt prospicere.*" I have enough to do to sit in my chair, and attend to patients, who come even from twenty and thirty miles round; and, what an over fastidious person might object to, I make them all pay ready money; yet give two hours' gratuitous advice to the poor every morning; the confinement (without

an assistant) is too much for me, and I wish either to sell or transfer the active duties to another, making what mutually beneficial arrangements I can. My *modus operandi* is peculiar; and I have labels ready printed with directions, and given to facilitate the dispensing department; but a partner, or purchaser, will alter all that, should he consider it derogatory to professional dignity. The daily profits, averaging from 15s. to £1, are certainly worth consideration; and my lawyer tells me I ought to have asked £300 instead of £100. It would suit any active man in want of practice, especially one who had uselessly toiled and could not make both ends meet, and had had a sickening of book debts. My only fear is that the class of patients would not be deemed sufficiently respectable by one accustomed to a West End practice; but, for myself, I would not refuse a legacy of £1000, even were it amassed by the sweeping of chimneys, nor a sovereign from the canvas bag of a farmer, or the tarry hand of a blue-jacket. I would cede a part or the whole house, the rent and taxes are only £25 a year, situated in the square, with an avenue of trees before it, not far from the railway and the beach. Ten rooms; with soft and hard water, but no garden. Pray have you any drugs, bottles, and pots, &c. to part with? Should you run down, let me know by what train or steamer, and I will either send my servant, or meet you myself.

Yours very obediently,

W. CURTIS.

8, Church Plain, Falmouth.

The Mayor, after referring to their legal adviser, said, he very much regretted that it was not in his power to afford him any assistance; it was one of those deceptions not cognisable by the Bench, and redress must be sought through the medium of a civil action. Applicant retired, thanking the Mayor for his attention and suggestion.

ON THE DUTIES AND RESPONSIBILITIES OF THE MEDICAL OFFICERS OF POOR-LAW UNIONS.

We make the following extracts from the speeches of certain honourable members during the late debate in the House of Commons, as they have an immediate bearing on the duties and responsibilities of those medical practitioners who undertake the attendance on the poor:—

Mr. FERRAND said, he would ask Her Majesty's Government whether they were prepared to allow the present system of medical treatment of the poor to continue? There was not a sportsman in England who would suffer his dogs to be treated as the poor were treated under the present system. The remuneration received by the medical

officer in many unions did not exceed 4d. or 6d. each case. He would appeal to his hon. friend the member for Finsbury (Mr. Wakley) whether any medical man could perform his duty to a poor patient at such a shamefully inadequate rate of remuneration? He was once told by a medical officer in his own neighbourhood that he had in hand the case of a man whose life he could have saved with ease, but it would cost him more than his salary to do so, and therefore the man must die. He would repeat it, the medical officer declared, that, by giving the patient, medicine, he might save his life, but it would cost him his salary to do so.*

Mr. ROEBUCK.—The hon. member for Knaresborough (Mr. Ferrand) said, he knew a professional gentleman employed under the Poor-law, and employed for the medical relief of the poor, who said that he had seen a pauper patient who might have been saved from death, but that the man employed under the law would not administer the medical relief which, under the law itself, he was required to do, because the medicine would cost as much as his salary. Now upon this he founded part of the charge against the hon. gentleman of a grave delinquency. If the charge were true, he laid it at the door of this medical man, whom he did not name, but whom he indicated, an accusation of manslaughter, and almost of murder; and if the charge were not true, the hon. member laid upon his own character and upon his own soul the greatest weight which it was possible to contemplate. He (Mr. Roebuck) would fix the charge upon him, and in the name of the Commons of England he demanded the name of that officer who had thus contravened his duty, and been guilty of an offence, so stated in the face of the Commons of England. It was declared by law, that every man who was a surgeon to

* This appears to us to be an extraordinary statement on the part of the honourable gentleman. Considering the sacrifices which are made by the profession for the benefit of the public, we are at a loss to explain the conduct of the officer alluded to. We do not comprehend how any medical man who had it in his power to save the life of another *with ease*, would still allow him to die under any circumstances whatever! Unless his salary was much lower than the average, we do not see how the whole of this, or more than this, was to be swallowed up in attendance on one pauper patient! What was the duty of a medical officer in such a case? Undoubtedly to attend this pauper, and not to let him die. If his time were thus taken away from attendance on other pauper patients in the union, he would then have had not only a just defence of his own conduct, but he would have shown in a most striking way, the utter inadequacy of the present law to afford proper relief to the poor, or a sufficient remuneration to the medical attendant for the services which they necessarily require! We are decidedly opposed to the present scale of payment; but we cannot agree in this mode of displaying its insufficiency.

a union was bound to administer medical relief; and if any medical man, being surgeon to a union, told the hon. member, what he said he did, that medical man asserted a falsehood, for the law did not require him to pay for the medicine, as that would come out of the poor-rates, and would form part of the legitimate expenses of providing for the poor. Again, he said, even if—and let the house mark the conjunction, and all his phrases, and how he put them—if the medical man said it—even if he did—how came it that the hon. gentleman, who was himself a magistrate, and who said that he administered the law with that promptitude which might almost be called guilty,—how came it that he stated this as one of the grievances of the people and against the law? "See," said he, "what the law requires of medical men; yet here is one who stated to a dying person that he would not administer the relief which by law he was compelled to do," and yet he laid this as a crime against the law.

Mr. FERRAND, in explanation, said, that, in making the statement he had made about medical officers, he was anxious to show that the pittance which they received was so small that it was utterly impossible for them to attend to the poor. The authority upon which he made that statement was the answer that was given by Mr. Guthrie, the eminent surgeon, of London, to a question that was put to him by the committee on the 6th of May, 1844. The question was to this effect:—"Are the committee to understand that your objection is with reference to the want of knowledge on the part of the medical officers that the poor cannot be properly attended to?" And the answer given was—"No; but that, even if a man were properly qualified, he would not be able, from the smallness of the allowance, to do his duty. No respectable man would take the office, except for the purpose of keeping out an interloper, and then he could get the duty done by an assistant."

Mr. ROXBURGH could speak of it as a matter within his own knowledge, that medical aid had been from time to time given to the poor at the expense of the county.*

Mr. HENLEY stated, that certain sums were agreed upon in certain cases, as for medicine and attendance, and he could undertake to say that in many cases the amount so paid was insufficient; that the medical gentlemen who attended the poor were not able out of the small sums allowed

* The only inference which we can draw from this admission is, that the medical aid allowed by Government under the law is wholly inadequate for the intended purpose! The arguments used by the hon. gentleman in his speech, however, tended to show the contrary. We need hardly say that we prefer the facts.

them to supply the necessary drugs, and that this was most especially true in those cases which required the administration of expensive drugs.

ALLEGED PRESENCE OF THE PLAGUE IN THE METROPOLIS.

Dr. TWEEDIE has addressed a letter to the *Times*, in reference to the prevalence of typhus fever under a severe form in the metropolis. After stating that the admissions to the Fever hospital during the present year have been but little above the average of the last five years, he says:—"In regard to the character of the cases received since January last, it is important to observe, that a very large majority have not been cases of typhus fever, but of inflammation of internal organs, more especially of the lungs, which every medical practitioner knows to be invariably accompanied with more or less feverish disturbance of the system. Indeed, for some time past, the proportion of cases of genuine typhus fever has been unusually small, much smaller than, from the late scarcity of provisions, and consequently inadequate supply of food, could have been anticipated.

"London, therefore, affords at this time a striking contrast to many of the large provincial towns, in which typhus fever, from causes which it is unnecessary to advert to at present, prevails to such an alarming extent.

"And, lastly, with respect to the tendency to inflammation of the glands of the face and neck—the circumstance on which the apparent connexion with plague is founded—it may be remarked, that this symptom is occasionally observed in very mild cases of fever, but that it has not been a very frequent occurrence lately, is evident from the fact that it has been observed in only five of 452 cases received into the Fever Hospital since January last; and that of these five only two have died, the fatal event in one being the result, not of the glandular inflammation, but of old standing disease of the chest.

"From these facts I think it may be deduced,—1st. That typhus fever is not at the present time alarmingly prevalent in London; 2d, that in its character it bears no analogy to the plague; and 3d, that the inhabitants of London have great cause of thankfulness that as yet the metropolis has been visited with a much less proportionate amount of epidemic fever than any other city in the kingdom.

* * The mortality from typhus fever is at present much above the average! the deaths last week were 52 to a spring average of 34.

PRODUCTION OF ALBUMINOUS URINE BY CANTHARIDES.

In a communication on Cystitis from can-

tharides, made by M. Lavalloé to the Academy of Medicine, at its sitting on the 15th inst., it is stated by the author that under the use of this vesicatory, at whatever part of the body it may be applied, and however distant from the hypogastric region, albumen is liable to show itself in the urinary apparatus, under three forms: 1, in solution: 2, as a deposit in the urine: and 3, as a false membrane produced in the bladder. The albumen is contained in the urine under these circumstances in much greater proportion than in Bright's disease:—the author states that in some instances, after a day's rest, the deposit constitutes more than half the height of the liquid. As an exception, the urine may contain no traces: but then vesical symptoms, such as pain and tenesmus, are absent. This is a new form of artificial albuminuria."—*L'Union Médicale*, Juin 17.

GRANT OF A PENSION TO MR. NEWPORT.

We are informed that Her Majesty, on the recommendation of Lord John Russell, has conferred upon George Newport, Esq., F.R.S., a pension of one hundred pounds. In the letter in which Her Majesty's gracious intention was announced, the Premier expressed his regret that the very numerous claims on the fund devoted to this purpose prevented him from making the grant more commensurate with Mr. Newport's scientific merits.

ROYAL COLLEGE OF SURGEONS.

GENTLEMEN admitted members, Friday, June 25th—T. Taylor—W. Hand—H. H. Smith—R. H. Kemp—C. W. Latham—E. Vye—J. Tarzwell—W. L. Thomas—A. Grant—A. W. W. Smith.

APOTHECARIES' HALL.

NAMES of gentlemen who passed their examination and received certificates to practise on the 10th inst.—Ernest Powell Wilkins, Newport, Isle of Wight—William Pollard Roberts, Yarmouth, Norfolk—Joseph Richard Morgan, Maidstone—Edward Bunbury Passmore, Lyncombe, Bath—William Pearson Ward, Royal Artillery—John Parkin, High Town, near Leeds—John Maund, Bromsgrove, Worcestershire.

June 17.—John Richardson, Hindon, Wilts—Edward Lund, Faversham, Kent—Charles Palmer, Liverpool—Charles Warren Price, Abergavenny—Jonathan Wybrants, Shepton Mallett—William Davies, Merthyr, Glamorganshire—Joseph Walter Raleigh Baxter, England.

June 24th.—Herman Henry Tribe, Chatham—John Riggs Miller Lewis—George Augustus Jeffery, London—William Jones, Anglesey—George Hawkesford, Birmingham—William Crosby, York—Thomas Clayton Mourilyan, Deal—John Dickson,

Ebrington, Yorkshire—John Griffiths Doidge, Cornwall—Charles Broughton, Mundham, Loddon, Norfolk—John Taylor Rowland, Mytton, Salop.

OBITUARY.

EDWIN JOHN QUEKETT, ESQ.

It is with deep regret we have to announce the death of Edwin John Quekett, Esq., at the early age of 38, after a few hours' illness, on Monday last, at his residence, in Wellclose Square.

DR. GEORGE JOSEPH BELL.

On the 20th ult., at Erzeroom, on his way from Persia, in the 34th year of his age, George Joseph Bell, M.B. Balliol, K.C.L.S., Radcliffe Travelling Fellow of Oxford, and physician to Her Majesty's Mission in Persia; second son of the late Professor George Joseph Bell, of Edinburgh.

Selections from Journals.

ON THE ENTRANCE OF INSOLUBLE SUBSTANCES FROM THE INTESTINAL CANAL INTO THE BLOOD-VESSELS.

BY PROF. OESTERLEN.

In some recent experiments Prof. Oesterlen administered, for five or six days in succession, to five rabbits, a cat, and two young fowls, a certain quantity of wood-charcoal in their food. The charcoal was reduced to the finest possible powder, and was rubbed up with water. About an ounce from first to last was taken by the rabbits: rather less by the other animals. Oesterlen preferred charcoal for his experiments, owing to there being no doubt about the complete insolubility in the intestinal canal, and owing to the circumstance of the smallest particles of this substance being distinguishable by their deep and uniform colour, and by their peculiar forms; the points and edges on their surface preventing their being mistaken for particles of pigment. In all the experiments the excrements voided from the animals were coloured black.

After administering the charcoal for five or six days, the animals were severally strangled, and the blood of each was examined. One of the mesenteric veins was in the first place opened, and a drop of blood removed therefrom on to a slip of glass, carefully cleaned from all trace of dust and charcoal, and then examined beneath the microscope. In such cases, it was noticed that in a portion of the blood, extending over not more than half a line of surface, there were from three to six parti-

cies of charcoal, which were in all respects similar to those of the charcoal administered. The smallest and most abundant of these particles were not more than from 1-300th to 1-200th of a line in diameter; others, however, and by no means a few, were from 1-30th to 1-100th of a line in length, by 1-180th to 1-150th in breadth: whilst others, again, appeared so large, that it is a matter for wonder how they could have made their way into the blood through epithelium, mucous membrane, and the walls of the blood-vessels. For example, some were 1-60th, 1-42d, and even more, of a line in length, and almost equally as broad. Many appeared as blocks, with ragged edges, or with teeth, spines, or tail-like processes projecting from them; others were distinctly triangular: and in many the pores were clearly discernible, so that the particles of charcoal could not be mistaken for pigment cells. Similar particles were also found in tolerably abundant quantity in blood from the trunk of the portal vein; also in the blood-cosgula of the right side of the heart, in the liver, the lungs, the spleen, more scantily in the kidneys, and lastly in the inferior cava. In the cat, the contents of the thoracic duct were examined, but no trace of charcoal was found therein; the quantity found in the blood and in the several organs of this animal was also much smaller than in the rabbits and fowls. None of the charcoal could with certainty be recognised in either the urine or the bile; no alteration could be detected on the mucous surface of the stomach or intestinal canal, or in any of the other organs or blood-vessels: the whole intestinal mucous surface had of course a blackish-gray colour.

That other insoluble substances besides charcoal can be absorbed into the blood was shown by experiments on two rabbits and a young fowl, to whom recently-precipitated Prussian blue was administered with their food. The excrements were coloured blue; and after death there were found in the blood of the mesenteric veins, of the portal vein, as also in different organs of the body, a considerable quantity of roundish dark particles, which exactly resembled those of Prussian blue, and around the margins of which, when highly magnified, a bluish lustre appeared. Neither Prussian blue, however, nor cinnabar, or any other red or yellow substance, is so well suited for these experiments as charcoal, since their molecules do not possess such a characteristic form as those of charcoal do, and their peculiar colour becomes manifest only when many of them are heaped together.

The general conclusion which must be derived from the results of the above experiments seems to be that, contrary to the prevailing opinion, solid insoluble substances

may be taken up from the intestinal canal into the blood-vessels.—*Heller's Archiv*, Bd. iv. Heft 1.

ON THE CHANGES IN COMPOSITION UNDERGONE BY THE CONTENTS OF HENS' EGGS BEFORE AND AFTER INCUBATION.

BY M. CAPEZZUOLI.

SOME experiments have been lately performed by M. Capessuoli on hens' eggs and young chickens, for the purpose of ascertaining the kind and quantity of the materials consumed during the early periods of life, both before and after incubation: and of determining the changes which these materials undergo in the system. The results of these experiments he has expressed in a tabular form. The first table contains the analysis of twelve eggs: and shews that the mean quantity of fatty matter contained in each egg amounts to 120 grains, that of albuminous matter to 160 grains, and that of water to 780 grains. The fatty matter was extracted by means of ether and boiling alcohol: all the residue was regarded as albuminous matter: while the quantity of water was ascertained by abstracting from the weight of the whole egg, the united weights of the shell and of the fatty and albuminous matters. The second table shews the results of similar analyses performed on 14 chickens, some of which were examined previous to incubation, others after they had left the shell and had partaken of various articles of food. The same table also gives the degree of heat of several of the chickens at the moment of death; the quantity and quality of the excrements evacuated during life; and the period of the first appearance of uric acid in the allantois during incubation. On comparing the quantity of fat and of albuminous matter in any of the chickens (as given in this table), with the average quantity of these substances in the egg, it at once appears how much fat and albumen has been lost or consumed by the chicken.

From his several observations the author draws the following conclusions. 1. During incubation, and during the life of the chick after its escape from the shell, the diminution undergone in the quantity of fatty matter is less than that undergone by the albuminous matter: and this is so, whatever be the food partaken of by the chick after its escape from the shell. 2. The diminution itself is very slight during incubation, however late the period is to which this process is prolonged; the loss in weight therefore which the contents of the egg suffer during incubation is for the most part at the expense merely of the water. 3. The diminution of both the fatty and albuminous matters is very great when the chicken has

lived for some time without food after its escape from the shell: so great that in some instances when the chickens had been deprived of all food for about a day and a half, the quantity of fatty matter contained in their body had diminished to less than one half of its original amount. The albuminous matter did not diminish in such a degree, though its decrease was very considerable, amounting to about one-third its original quantity. 4. In chickens fed with flour and sugar the diminution was also very great: greater even, as regards the fat, than in the former case. Notwithstanding this, however, it cannot be supposed that this kind of food contributed nothing to the maintenance of life; for the chickens in question lived longer, and were more lively and active, than those to whom no food at all was given. It is probable, therefore, that in this non-nitrogenous food they found some compensation for the large consumption of material effected during respiration. 5. Lastly, even in those chickens which were fed in the ordinary way, a remarkable diminution in the quantity of fatty and albuminous matters was observed; so that it must be inferred, that chickens in the earliest periods of life always consume more material than they obtain by means of their food.

It may be concluded from all the above, that even albuminous substances are employed in the respiratory process: and in those cases even, in which those articles of food that in the strictest sense may be regarded as respiratory, are provided in full quantity.—*Heller's Archiv*, vol. iv. p. 39.

BIRTHS & DEATHS IN THE METROPOLIS During the week ending Saturday, June 19.

BIRTHS.		DEATHS.		Av. of 5 Yrs.	
Males....	630	Males....	537	Males....	468
Females..	638	Females..	441	Females..	446
	1178		978		914

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—Registrar's Districts, 129.
Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James.. (Pop. 301,336)	113
NORTH—St. Marylebone; St. Pancras; Islington; Hackney..... (Pop. 366,303)	210
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London..... (Pop. 374,759)	181
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar..... (Pop. 393,247)	196
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich..... (Pop. 473,460)	270
Total	978

CAUSES OF DEATH.

ALL CAUSES	978	Spring av.
SPECIFIED CAUSES.....	978	909
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	301	166
<i>Sporadic Diseases, viz.—</i>		
2. Dropsy, Cancer, &c. of uncertain seat	101	99
3. Brain, Spinal Marrow, Nerves, and Senses	147	158
4. Lungs and other Organs of Respiration	251	275
5. Heart and Bloodvessels	26	20
6. Stomach, Liver, and other Organs of Digestion	91	70
7. Diseases of the Kidneys, &c....	21	8
8. Childbirth, Diseases of the Uterus, &c.....	14	10
9. Rheumatism, Diseases of the Bones, Joints, &c.	15	8
10. Skin, Cellular Tissue, &c.....	3	2
11. Old Age	43	57
12. Violence, Privation, Cold, and Intemperance	65	26

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	20	Convulsion.....	39
Measles	86	"	56
Scarlatina	16	"	56
Whooping-cough..	27	"	56
Typhus	52	"	56
		"	56
Dropsy.....	9	"	56
Sudden deaths ..	12	"	56
		"	56
Hydrocephalus..	26	"	56
Apoplexy.....	21	"	56
Paralysis.....	13	"	56
		"	56

REMARKS.—The total number of deaths was 64 below the weekly spring average. The mortality from small-pox and measles is on the increase.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	29.53
" " Thermometer	56.
Self-registering do. max. 88.5 min. 38.	
" in the Thames water — 64.5 — 60.	

a From 12 observations daily. b Sun.

RAIN, in inches, '94: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 2.6° below the mean of the month.

NOTICES TO CORRESPONDENTS.

We omitted to state in our last number that the correspondence between Professor Syme and Mr. Caesar Hawkins was published at the request of Prof. Syme.

We are obliged to Dr. Murphy for the copies of the *Chemist* which have safely reached us.

The Report of the Microscopical Society next week.

Lectures.

COURSE OF SURGERY,

Delivered in the years 1846 and 1847,

By BRANSBY B. COOPER, F.R.S.
Surgeon, and Lecturer on Surgery at Guy's Hospital.

LECTURE V.

*Resolution—Adhesion—Phenomena resulting from lesion—Effusion of blood—effusion of lymph—period different in different tissues—Organization of fibrine—Union by adhesion not always to be attempted—Plastic surgery—Talicotius—After treatment—Dressing wounds—Contused and lacerated wounds—Punctured wounds—Constitutional effects—Incision—Poisoned wounds.
Animal Poisons—natural—morbid—Liebig's views.*

I HAVE NOW, gentlemen, finished the consideration of Irritation; and as I have shown that constitutional irritation may sometimes stop short of the accession of symptomatic fever, so I shall now have to describe to you, that local inflammations do also sometimes terminate without producing suppuration or any other disorganization of the affected tissue. I feel, therefore, inclined to draw this analogy between the two derangements, that, just as local inflammation may terminate in resolution, or go on to suppuration, ulceration, or gangrene, so may irritation terminate in resolution, or go on to irritative fever, and its consequences.

Resolution.—When inflammation ends spontaneously, or is checked by the application of remedies, whether constitutional or topical, it is said to have terminated in Resolution, and the symptoms subside, leaving no disorganization of the affected structure. This may be considered, in fact, as the only true termination; for, although inflammation may lead to further effects, as adhesion, suppuration, &c., so soon as these processes have accomplished their results, the inflammation has still to subside.

Adhesion.—None of the results of inflammation are more important than that phenomenon termed the adhesive process, whether it be considered as a safeguard from the dangerous effects which would otherwise so frequently occur even from the slight injuries to which the human frame is so constantly exposed, or whether it be estimated for the office it performs in the healing up or reuniting parts of the body recently divided. The series of phenomena which follow the violent division of texture are

not, however, constant in their order, nor equal in their violence, as the degree of action set up depends upon many concomitant circumstances, namely, the manner in which the wound was inflicted, the texture which is severed, and the constitution of the person injured. Whatever may be the amount of these complications, effusion of blood to a greater or less extent is a certain effect of lesion, which soon coagulates more or less, separating the divided edges of the wound. This coagulation of the effused blood may be considered as a salutary process, as it prevents a further effusion by blocking up the mouths of the divided vessels: when, therefore, there is a tendency to hæmorrhage after an operation, surgeons should not be too diligent in sponging away the blood from the surface of the wound, but, having secured the larger vessels, leave the coagulum sufficiently long to produce the secondary effect of permanently sealing the smaller branches. It is for this purpose you frequently see that after amputations and the removal of breasts that the wounds are not dressed for three or four hours after the operation has been performed. If the coagulum be not removed,—which should never be resorted to unless it be so large as widely to separate the divided edges of the wound, and prevent their subsequent adhesion,—the serum and red particles are absorbed, and the approximation of the edges of the wound is promoted by the contraction of the fibrine. From the irritation, inseparable from the infliction of the wound,—from the presence of the coagulum,—from the increased demand of the injured tissue for nutrition,—the arteries of the surrounding parts become increased in their action, and the capillaries consequently distended; the blood in them immediately undergoes a change resulting from these conditions, and fibrine, or coagulable lymph, is poured out, as a tenacious diffuent substance, which soon coagulates, and in a few hours becomes organized. The length of time, however, for its organization differs from various circumstances, and most especially from the state of the patient's health.

It has been a matter of dispute how this fibrine is supplied with blood, whether from the extremities of the divided blood-vessels, or from the capillaries; there can be no doubt it is derived from the capillaries, being, in fact, a corresponding action to that which is constantly going on in the natural nutrition of every structure of the body,—but, under injury, rendered much more active and evident from the circumstances which excited the action. The time which elapses before the fibrine is poured out depends upon the nature of the inflamed tissue. The capillaries of the serous membranes furnish it more quickly than those of any

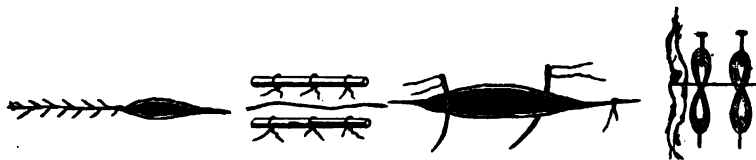
other structure; for, in two hours after the operation for hernia, I believe the cavity of the abdomen has been found closed from the outer wound by the effusion of lymph. Sir Everard Home found, 29 hours after the operation for strangulated hernia, that this lymph had become organized, and admitted injection into its newly-formed vessels.

The manner in which the lymph or fibrine becomes organized is an important physiological question. By some it has been supposed that the new vessels are formed by the prolongation of the extremities of the old ones from the edges of the wound inosculating with one another, whilst others maintain, that the red corpuscles are exuded from the capillaries, and, thrusting their passage through the meshes of the fibrine, thus form channels of communication between the two edges of the wound, and in this way constitute the new blood-vessels. John Hunter was of opinion that the fibrine of the effused blood became organized; and, although this opinion is not generally admitted, I am certain I have seen injections permeate a clot of fibrine from the coagulum of blood, which originally filled up the medullary cavity of a broken bone immediately upon the infliction of the injury. The union of all clean-cut wounds depends upon this process of adhesion, and was termed by Hunter, the "union by the first intention;" it is a phenomenon of the greatest importance to the surgeon, as without it no operation could possibly be

performed with any hope of a successful issue. When you understand the principles which regulate the action necessary to the completion of adhesion, in the practice of your profession you will find ample opportunity of employing them to facilitate the union of incised wounds by this process; which, when judiciously effected, may be accomplished with little or no constitutional disturbance to the patient: while, on the contrary, if not well managed, a much more protracted mode of cure must be established, and the constitution rendered liable to become severely affected.

One of the great objects is to produce close coaptation of the edges of the wound, and to maintain this approximation; for, if they remain separated, union by adhesion cannot be accomplished. Sutures are therefore frequently employed, but, as a general rule, they should be avoided if the object can be obtained by more simple and less irritating means, such as plasters and bandages.

There are four different kinds of sutures employed, to which I shall call your attention. The first is the *glover's stitch*: it is the one in use in sewing up dead bodies, and I think but little applicable to the living subject, although I have seen it employed in hare-lip upon one or two occasions with great success. I should think, however, the frequent introduction of the needle, and the quantity of silk employed, likely to induce too much irritation, and liable to interfere with the adhesive reparation.

*Glover's Stitch.**Quill Suture.**Interrupted Suture.**Twisted Suture**

The quill suture is under many circumstances well adapted for the purpose of keeping the edges of a wound in good apposition. It causes no pressure immediately on the wound, and, instead of inverting the cuticle, which prevents union,—as, indeed, the *glover's stitch* is apt to do,—it tends to produce a slight eversion, and brings the parts in the best possible position for union. The interrupted suture is the one most frequently employed by surgeons, and silk is the ligature generally used, but platinum wire is preferred by some surgeons; but, as it is rarely necessary, or right, to leave the sutures in the wound longer than 48 hours, I think it signifies but little whether platinum wire or silk be employed. I confess I like the latter, as being far more manageable. The twisted suture is principally employed

in the operation for hare-lip, and in closing an unnatural opening in the urethra. It consists of the silk being twisted around a pin, passed through the two edges of the wound, which are kept in approximation by the frequent turnings of the ligature around the pin in the form of the figure 8. Although sutures are not very frequently required, they are certainly of advantage, and should be employed in cases of wounds of the abdomen, attended with a hazard of the escape of the viscera; and under those circumstances in which the edges of a wound cannot be brought into perfect contact by sticking-plaster bandages and appropriate position.

With regard to plasters, the least irritating are the best, and I have never met with any so good as the adhesive plaster of this hospital, which is composed of the following

ingredients:—*R. Cerat. Saponis*, ℥iv.; *Emplast. Resinæ*, ℥viij.; *Sesquioxide Ferri*, 3j. *M.*—for better, in my opinion, than that composed of a solution of isinglass, spread on oil silk, which I have never found sufficiently adhesive to trust to, the slightest discharge always loosening it; and a certain degree of support is always required, although plasters are not intended to exert a continued force in maintaining the proximity of the edges of a wound. Bandages may sometimes be employed instead of sutures, and, when efficient for the purpose, are generally preferable.

Adhesion, however, is not always to be expected as the termination of lesion, as many interrupting circumstances may interfere with its completion. Ulceration, supuration, or sloughing, may result either from local or constitutional causes, which, in fact, should be recognized by the surgeon, as it may determine him not to attempt the union by adhesion, but rather induce him to encourage another process of cure, which, although more protracted, he has learned from experience is more appropriate to the nature of the injury, and general condition of his patient. Persons with broken down constitutions, from debauched habits, we know do not furnish from their blood organizable fibrine, but unhealthy effusions, and therefore we do not persist in the attempt at union by the first intention, but encourage the granulating process, by improving the general health of the patient. A precaution we should always adopt, indeed, before we submit unhealthy people to any unavoidable surgical operation; for unavoidable it must be to induce a surgeon to operate on an unhealthy patient.

But in healthy persons we look for the beneficial effects of adhesion; and, in fact, in practice, rest our confidence more on this salutary action than on any other sequel of inflammation, for the checking of hæmorrhage, as well as for the union of wounds both of soft and hard structures.

Plastic surgery is so called from the operator relying wholly upon the effusion of adhesive matter, or plasma, to secure the union which he requires. *Talicotius* has rendered his name renowned, from being early in the annals of surgery, as famous for his attempts, and success indeed, in removing congenital malformations, restoring traumatic disfigurements, engrafting new noses and ears, and re-establishing the integrity of damaged excretory canals. Such operations are still adopted, and I have no doubt many of you have seen the operation performed, for the removal of the deformity of a "hare-lip," which is a plastic operation, and is generally successful in its result; not so much can be said for most of these operations, for when a portion of skin has

to be partially dissected from its natural position, to be brought down for the purpose of engrafting on a neighbouring exposed surface, you must not be disappointed if you find that the adhesion does not take place, and that your operation fails from the sloughing of the borrowed portion of integument. I have twice attempted to close an opening in the urethra by a plastic operation; one a traumatic case, and the other congenital. I failed in both, finding it totally impossible to prevent the passage of the urine through the wound during micturition, which prevented the union by adhesion. Some cases have been recorded, in old works on surgery, of fingers and noses having been completely severed from the body, and, upon being accurately replaced, have become permanently reunited. From some experiments which I have made, I have reason to doubt whether a part, once severed completely from the living body, can be made to reunite. It is true that Mr. Hunter and Sir Astley Cooper transplanted teeth and the spurs of fowls into a cock's comb, and the legs of other birds; and that there are preparations preserved, both in the Royal College of Surgeons and in the Museum of Guy's Hospital, which shew them adherent in their new positions: but it is yet to be proved if the attachment be any thing beyond mere cohesion, independent of actual vascular connection. Such cases, gentlemen, are to be considered rather as the curiosities in plastic surgery, and not very likely to occupy much of your attention. But in the everyday duties of your profession, you will be called upon to seek the aid of the adhesive process; it may be, in the simple healing of a trivial wound, or, it may be, in the attempt to convert the formidable accident of compound fracture into a simple one, by closing the wound by adhesion, and thus converting the injury into what John Hunter called a "compound simple fracture," in contra-distinction to the "simple compound fracture," as he termed the solution of continuity of bone, which had been simple, but had become converted into a compound fracture by subsequent ulceration or abscess, producing an external wound, communicating with the fractured ends of the bone.

I have already said, it is not to be considered that every incised wound can be made to unite by the adhesive process, or that even attempts should be made to effect it. The following conditions would forbid the practice:—if too great a time has elapsed since the infliction of the wound, if its edges be inflamed, or foreign substances penetrating the tissues, then it would be injudicious to produce coaptation, as a degree of inflammation, beyond that

necessary to adhesion, is either already present, or liable to occur. Remember, however, that a certain degree of inflammation is essential to the adhesive mode of union, and yet it must not go beyond a certain extent; hence, therefore, sometimes the propriety of promoting inflammation, and, again, the probable necessity of checking and modifying it, during the reparation of an incised wound. Stimulating or soothing, and even depleting measures, may be necessary, therefore, to regulate the required action.

Pain, you know, constitutes a symptom of inflammation, but it may be the mere result inseparable from the infliction of a wound. In the former case, it is unsafe to prescribe opium, as it is liable to suppress, not only the natural secretions of the body, but also the effusions necessary to reparation; in the latter case it may be administered, and we often prescribe it after painful operations, as it not only alleviates suffering, but tends to prevent the occurrence of a rigor, so frequently following severe surgical operations.

The treatment of a patient during the process of the cure of a wound, may, in a very great measure, be regulated by the appearance and actual condition of the effusions from its surface, as they form the best indications of the real state of the constitution, and enables the surgeon scientifically to choose the appropriate constitutional and local remedies. Whether evaporating lotions or poultices, whether stimulating or sedative applications, are to be had recourse to; and whether antiphlogistic or tonic remedies are to be the constitutional means adopted.

You observe, therefore, gentlemen, how necessary it is that you should, at the same time, be conversant with the treatment of internal derangements, as with the adaptation of local adjustments, for the cure of wounds.

In the healing of wounds of all kinds, the repetition of the application of "dressings" is always necessary; and let me urge you to the necessity of gentleness in this procedure,—try to diminish as much as possible the sufferings of your patient; and remember that by the violent removal of plasters, that, although you may save your time, you are very likely to undo nature's curative processes, and not only protract the period of your patient's recovery, but probably prevent the adhesive union, which, but for your hasty interference and roughness, was all but completed. It is said, a surgeon should possess a lady's hand, a lion's heart, and an eagle's eye; but even these gifts would avail him nothing without he possessed humanity enough to direct them.

On the dressing of "stumps" after am-

putations, more depends as to the well-doing of the patient than upon the amputation itself. One person cannot possibly perform this duty well; for it is required that the stump should be firmly supported during the whole period of the dressing, and the soft parts pressed forward, so as not only to prevent their retraction while the plasters are being removed, but also to assist in keeping the end of the bone well covered; not more than two strips of the plaster should be removed at once, and when the edges of the wound, thus exposed, have been thoroughly cleansed by gentle ablation, fresh straps should be applied in the place of the removed ones, and in this manner the dressing may be progressively completed, if there be no reason to give up the hopes of healing the wound by adhesion. When it is ascertained that the process of adhesion is not applicable, other means must be adopted,—such as tend to facilitate union by granulation, which process may with propriety be termed "secondary intention." When there are many wounds to be dressed upon the same person, as is so frequently the case in scalds and burns, they should not all be exposed at the same time to the irritating influence of external agents, but they should be separately dressed, by which precaution you not only save your patient much suffering, but conduce greatly to the rapidity of his cure.

Contused and lacerated wounds are not to be treated in the same manner as incised ones, for no hopes of union by adhesion are to be anticipated, the tissues having received so severe an injury that their capillaries are incapable of pouring out lymph until the injured parts have been removed, either by slough or disintegration, when the healthy capillaries set up a new process, and throw out lymph upon the surface. This, becoming organised, constitutes what is termed the process of granulation—a subject to be dwelt upon more particularly when speaking of gun-shot wounds.

Punctured wounds are remarkable for the degree of constitutional irritation they create; nor is there any very satisfactory explanation of the cause of this disturbance. It has been attributed to the extent of the wound being in depth, instead of in surface, so that the consequent effusions are pent up from the inextensibility of the tissues, instead of being allowed readily to escape. The greater degree of pain which is usually experienced from punctured wounds may depend also upon the larger size of the nerves which have been injured by the penetrating instrument. If such be the conditions of a punctured wound, it seems fairly indicated, that rendering it an incised one by freely laying it open, would at once relieve the patient's sufferings, by liberating the effu-

sions; and, when fasciæ, thecæ, and tendons are wounded, which possess but little vital power, and are very inextensible, I invariably adopt this practice. In the treatment of punctured wounds, I believe there is scarcely ever sufficient attention paid to the keeping of the part injured in a perfect state of rest, the strict observance of which I have always found attended with the most beneficial effects. If the pain, redness, heat, and swelling increase, attended with absorbent inflammation and constitutional derangement, general and topical remedies must be had recourse to: the first for the purpose of allaying the fever, and increasing the constitutional powers; therefore calomel, James's powder, and opium, with ammonia and serpentary, in a state of effervescence, are indicated; while the topical means intended to subdue the local action (which is, in fact, the exciting cause of the constitutional disturbance) are poultices, fomentations, strict observance to perfect rest, and elevation of the injured limb. If such means do not relieve the local action, leeches may be required; nor are their application inconsistent with the administration of tonics at the same time. Thus we often find it necessary, particularly in strumous inflammations, as in ophthalmia and diseases of joints, to recommend even stimuli internally, while topical depletion is employed at the same moment, and with the greatest advantage. Some surgeons recommend, when absorbent inflammation exists, to paint the course of these inflamed vessels with lunar caustic; but I cannot myself understand the rationale of this treatment, unless it be intended to act merely as a counter-irritant. I confess I should be more afraid of the liability to phlebitis, than sanguine in the expectation of checking the inflammation of the absorbents; and I believe caustic should only be used when there is reason to believe that some actual poison is the irritating agent.

Poisoned wounds.—It is true there is but little known how certain animal and vegetable poisons are capable of producing the serious constitutional effects which follow their introduction into the system of living animals. But still, as, after the stings and bites of some animals, and the admission of vegetable and mineral poisons through the medium of the ingesta, most violent symptoms are produced, it becomes a subject of the deepest interest to ascertain the fittest antidotes to the poison, and, indeed, demands not only the most energetic, but the most scientific judgment, for the application of the appropriate remedies. With respect to the treatment of the effects of poisons taken into the stomach, I must leave the consideration of that subject to my friend and colleague Mr. Alfred Taylor, whom, I believe, I may justly pronounce to be ac-

knowledge the first toxicologist of the age. I shall therefore only direct your attention to the symptoms arising from the introduction of poisons into the system from without.

John Hunter has defined a poison as a "matter which produces a peculiar mode of irritation, and affects the vital principle in a peculiar manner, even when given in the smallest possible quantity, and this without relation to any known chemical or mechanical powers."

From the sting of a nettle to the direful effects arising from the bite of a rabid animal, such distinct phenomena result, that medical aid is necessarily required for their relief. It is my province, however, according to conventional custom, particularly to draw your attention to animal poisons, which may be divided into two kinds—natural and morbid. "The natural," says Hunter, "are such as belong originally and naturally to the animal possessing them, and not depending on any preternatural affection or alteration in structure. The natural poisons have no power of propagating their effects beyond the individual affected."

"The morbid, on the contrary, depend on a preternatural action or change of structure in the body communicating. The morbid poison in general may be communicated by the poisoned to others, and, therefore, may be propagated to many individuals, because the poisoned receives the same powers of poisoning others as the animal possessed by which it was poisoned." The blood, in fact, becomes tainted by the influence of the poison, and the wound itself (if one results from the mode by which it was communicated) pours out effusions capable of producing the poison in another by inoculation.

"Some of the natural poisons act locally only, as those of the wasp and bee; others both locally and constitutionally, as the poison of the viper, rattlesnake," &c. It is a question, however, if the absence of the constitutional symptoms after the sting of the wasp and bee is not attributable to the weakness of the poison, rather than to any specific difference in the poison itself. Those poisons which act upon the constitution usually first produce local effects before they are absorbed, and affect the system: as, for instance, pain in the part receiving the poison, followed by red streaks and swelling of the lymphatic glands, which are preludes to rigor, convulsion, livid effusions, swelling of the whole body, and death.

In this country there are but few reptiles the bite of which produces fatal effects; but in warmer climates there are many, the poisonous virus of which proves rapidly destructive. The cobra de capella and the rattlesnake, I believe, are the most fatal of

the kind, and in the East Indies many persons annually fall victims to their deadly venom. It is to India, therefore, that we naturally look for the best authorities upon the treatment of those cases, and, as far as I can collect, the following is the treatment adopted:—A ligature, immediately upon the bite being inflicted, is to be tied tightly above the bitten part, with a view, there can be no doubt, of checking the absorption of the poison; and, to withdraw it from the wound, a cupping-glass or suction of any kind is recommended. Large doses of ammonia are given internally, and the wound is also well washed with a solution of this salt, with a view of neutralising the acid properties of the poisonous secretion. It is said, however, that the natives are aware of some indigenous vegetable productions which act as antidotes to the poison of the cobra de capella. The symptoms which follow, when the effects of these reptiles prove fatal, are rapid swelling, attended with excruciating pain of the poisoned limb: the sensorium becomes affected, stupor supervenes, powerful convulsions and delirium follow, and death closes the scene in a few hours after the infliction of the injury. After death, decomposition most rapidly takes place. Science hitherto has done nothing towards the discovery of the immediate cause of death from the inoculation of these animal poisons; nor need this difficulty produce much surprise, when we contemplate the fact of our utter ignorance of the *modus operandi* of the various medicines which we apply as remedial agents. For who can explain the ultimate cause of the action of ipecacuanha as an emetic, or magnesia as a purgative, although they are every hour prescribed with a perfect confidence as to the result of their administration?—The sting of the viper of this country rarely proves fatal to adults, but there are many cases on record of children having fallen victims to the effects of their poisonous bite. There is scarcely a village without either a barber or a midwife, who is supposed to possess an infallible specific against its baneful effects, and as almost all the bitten recover, the restoration is attributed to the efficacy of the supposed antidote; but the fact is, I believe, that the viper of this country does not inoculate a sufficient quantity of poison to destroy life, unless, from idiosyncrasy, the patient be abnormally susceptible to its impressions. If any of you should be called to a person bitten, I should recommend excision of the part, and the application of caustic, employing afterwards such means as were most likely to subdue the mental anxiety, naturally arising from the alarm, and the constitutional irritation consequent upon the local injury.

Wounds from the sting of the hornet and wasp are sometimes troublesome in persons of an irritable temperament, and require soothing remedies to prevent the constitutional effects otherwise likely to occur. The best application I know of is sweet oil, and I have myself experienced its efficacy after being stung by a hornet. I found the pain was assuaged in a very short time after its application, although it had been violent; and the swelling, which was considerable, rapidly subsided. I suppose then oil acts merely by excluding the inflamed part from the influence of all external agents. I have heard that indigo, rubbed on the part directly a person has been stung, prevents the usual consequences of the accident; but should inflammation persist in spite of these applications, it must be resisted by the same antiphlogistic means as are adopted under common circumstances.

Wounds inflicted during dissection frequently (as I have already described when speaking of irritative fever), produce effects which are attributed to the absorption of animal poison, but, I believe, it is but in very few instances where the severity of the symptoms may not be found to depend upon the state of the constitution of the patient at the time of the accident, and not upon the inoculation of a poison. I do not mean to deny, that in the post-mortem examination of bodies recently dead, that specific poisons are not sometimes imbibed, and more particularly if the person has died of puerperal fever, or even of acute peritoneal inflammation, for under these circumstances there does appear to be some specific virus generated, and this is indicated by very marked symptoms. The absorbents become rapidly inflamed, the limb swells, and is extremely painful, and this pain is much increased by the slightest pressure. The absorbent glands soon enlarge, violent constitutional fever sets in, rigors and delirium follow, and, if the patient live long enough, abscesses form in the axilla under the pectoral muscles, and often in various parts of the body. The formation of these abscesses seems a favourable symptom, for on the evacuation of the pus the patients frequently recover; but when there is not power enough for suppuration to take place, the tongue soon becomes brown, typhoid symptoms supervene, attended with a hot dry skin, and quickly followed by delirium and death. Upon examination of these cases not only the absorbents of these injured limbs are found highly inflamed, but also the veins, in which pus is frequently detected. Under these circumstances the patient is said to have died from phlebitis. The presence of pus in the blood is supposed in such cases to be the great cause of the violence of the symptoms; but whether this pus

is to be considered as containing any specific poison, or merely as producing its baneful influence as a fluid unfitted for circulation, is a pathological question yet to be solved. In such cases, gentlemen, I have already cautioned you with respect to antiphlogistic treatment. Medicines should be recommended which have a tendency to restore the secretions, maintain the constitutional powers, and allay irritation. But of all things I recommend, if any of you should be threatened with an attack of this nature from a wound on your finger, that you should at once abstain from your professional avocations, get into a Margate steam-bath, and for a few shillings you may make a most salutary expedition, and save months of absence from duty. I speak of the cheapness of the remedy I have prescribed, because I myself have experienced the necessity of husbanding resources, which, although so liberally bestowed by parents, is often done at the expense of submitting themselves to privation.

I fear, gentlemen, I have thrown but little light on this difficult question of the *modus operandi* of poisons, but am induced to offer some hypotheses, rather for your future consideration than as views to be adopted without due investigation. May not poisons be supposed to act by converting some particular element of the organism into a new form incapable of performing the functions of the original organic element.

May not these poisons be classed as—

I. Poisons acting directly on the blood.

II. Poisons acting on the tissues or mucous membranes. Let us review the action of the poisons under these two heads.

A. These will include deleterious gases acting through the medium of the lungs: type, sulphuretted hydrogen.

B. Poison acting on the blood through the medium of the mucous membrane, and which to be poisonous must be soluble, or rendered so by the action of the secretions: type, probably narcotics.

C. Poisons acting by direct action on the blood, as in wounds: syphilis.

These probably all act by converting an element of the blood into some new compound incapable of developing organic tissue.

These blood-poisons may also be subdivided, as—

(a.) Those acting directly by altering the character of some of the salts of the blood; acids, by displacing an acid, such as carbonic in lactic acid; the alkalies, such as vegetable organic bases, by displacing the bases of the salts in the blood: types, hydrocyanic acid, and probably strychnine, &c.

(b.) Those acting indirectly by inducing alteration in the character of the constitution of some compound elements existing in the

blood by catalytic action, thus inducing a sort of fermentation: febrile affections. Miasmata probably thus produce their influence on the constitution. Of these changes the type would be small-pox, cow-pox (analogous to saccharine and lactic fermentation).—Liebig.

II. Poisons acting on the mucous membranes may be similarly subdivided:—

(a.) Those poisons which form insoluble and indestructible compounds of the membrane and tissues, thereby rendering the tissues incapable of performing their functions: type, arsenic, corrosive sublimate. To the same class belong bodies which arrest the processes of digestion, as empyreumatic oils.

(b.) Such poisons as, on the other hand, induce a fermentation of an unhealthy character, perverting the digestive process into such a fermenting process as is destructive to life: type, food in a state of putrefaction, as bad sausages.

The character here assigned to the action of poisons is, as many of you will easily recognise, suggested by the views taken by Liebig on this subject.

NOTE ON THE VITELLARY NATURE OF THE CORPUS LUTEUM.

BY C. D. MEIGS, M.D.

DR. MEIGS has observed, that upon turning the screw of the compressor, while a bit of fresh corpus luteum lies between the plates, he can, with a magnifying power of 500, perceive the escape from the crushed mass of vast numbers of corpuscles resembling, in every particular, the granules and corpuscles of the yolk of egg. He has made the observation a great many times; and he has placed, upon the platine, portions both of fresh yolk and fresh corpus luteum of the cow. Upon the most rigorous examination of the microscopic appearances in each case, he could not discover any difference, except that from the crushed bit of corpus luteum there escapes with the yolk-grains a certain quantity of detached cellular or epithelial structure and blood discs.

When a portion of bright yolk, or a portion of equally bright corpus luteum, is under the objective, the whole of the transmitted light, before the focus is obtained, is yellow, and alike in both cases; while the transmitted light is also yellow in passing through a single, or three or four separate corpuscles of either substances. The micrographers have not noticed this substance. Dr. Bischoff, in his *Entwicklungsgeschichte*, takes notice of numerous punctiform bodies, but does not hint at an idea of their being yolk-grains.—*American Journal of the Medical Sciences*.

LECTURES ON
NUTRITION, HYPERTROPHY, AND
ATROPHY,

Delivered in the Theatre of the Royal College of Surgeons, May 1847,

By JAMES PAGET, Esq.
Professor of Anatomy and Surgery to the College.
[Reported by WILLIAM S. KIRKES, M.D.]

LECTURE III.

Fourth condition essential to healthy nutrition, namely, a healthy state of the part to be nourished—this implied in the very idea of assimilation.—Precision of the assimilative process in diseased as well as in healthy parts—shewn in the persistence of cicatrices, thickenings, and indurations—and illustrated in the case of infectious and inoculable diseases—evidence furnished by frequently recurring diseases not contradictory of this—both prove that an alteration once produced in a part is likely to be perpetuated.—Tendency of altered blood and tissues to revert to the perfect state.—Exactness of assimilation applied in explanation of the connection between the immaterial Mind and the brain.

Nature of the process of assimilation—its object the replacement of lost particles—mode in which the old particles are disposed of—distinction between parts which die and those which simply degenerate—the former cast out entire, the latter absorbed.—Formative portion of the assimilative process probably always one of development—evidences of this—difference between nutritive reproduction and nutritive repetition.

Second variety of the formative process, namely, Growth—this consists in the addition of fresh quantities of the same material—amount of this addition proportioned to the requirements of the part—"reserve power" in tissues by which this is effected—excess of such addition constitutes hypertrophy—deficiency of it, atrophy.—Besides growing in hypertrophy, parts may, on an emergency, be developed into higher forms of tissue.—The conditions essential to healthy nutrition equally or more necessary in hypertrophy.

THE last condition which I mentioned as essential to healthy nutrition, is a healthy state of the part to be nourished.

This is, indeed, involved in the very idea of assimilation; wherein the materials are supposed to be made like to the structures

in which they are deposited: for unless the type be good, the anti-type cannot be.

With the consideration of this part of the subject, let me connect some illustration of the exactness of assimilation in diseased as well as in healthy parts,—that is, of the precision with which the new-formed blood and tissues take the likeness of the old ones in all their peculiarities, whether structural, chemical, or vital; whether normal, or abnormal.

The exactness of this assimilation in the healthy parts has been already, in some measure, illustrated, as preserving through life certain characteristic differences, even in the several parts of one organ,—preserving, also, all those peculiarities of structure and of action, which form the proper features, and indicate the temperament, of the individual. In these, and in a thousand similar instances, the precision of the assimilative process is perfect and absolute, except in so far as it admits of a very gradual alteration of the parts, in conformity with the law of change in advancing years.

Nor is there less of exactness in the assimilation of which a part that has been diseased is the seat. For, after any injury or disease, by which the structure of a part is impaired, we find the altered structure,—whether an induration, a cicatrix, or any other,—perpetuated, as it were, by assimilation. It is not that an unhealthy process continues: the fact is the result of the process of exact assimilation operating in a part of which the structure has been changed: the same process which once preserved the healthy state, maintains now the diseased one. Thus, a scar or a diseased spot may grow and assimilate exactly as its healthy neighbours do. The scar of the child, when once completely formed, commonly grows as the body does, at the same rate, and according to the same general rule; so that a scar which the child might have said was as long as his own fore-finger, will still be as long as his fore-finger when he grows to be a man.

Yet, though this increase and persistence of the morbid structure be the general and larger rule, another within it is to be remembered, namely, that in these structures there is usually (especially in youth) a tendency to revert to the original state: a looking back, as if with longing, after the old perfection. Hence, cicatrices, after long endurance, and even much increase, may, as it is said, wear out; and thickenings and indurations of parts may give way, and all become again pliant and elastic.

The maintenance of morbid structures is so familiar a fact, that not only its wonder, but its significance, seems to be too much overlooked. What we see in scars and thickenings of parts appears to be only an

example of a very large class of cases: for this exactness by which the process of assimilation in a part maintains the change once produced by disease, offers a reasonable explanation of the fact that certain diseases usually occur only once in the same body. The poison of small-pox, or of scarlet fever, being, for example, once inserted, soon, by multiplication or otherwise, affects the whole of the blood: alters its whole composition: then, the disease, in a definite form and order, pursues its course; and, finally, the blood recovers, to all appearance, its former state. Yet it is not as it was: for now the same material, the same varolous poison, will not produce the same effect upon it; and the alteration thus made in the blood or the tissues, is made once for all: for, commonly, through all after-life, assimilation never deviates from the altered type, but reproduces particles exactly like those altered by the disease: the new ones, therefore, like the old, are incapable of alteration by the same poison, and the individual is safe from the danger of infection.

So it must be, I think, with all diseases which, as a general rule, attack the body only once. The most remarkable instance, perhaps, is that of the vaccine virus. Inserted once in almost infinitely small quantity: yet, by multiplying itself, or otherwise, affecting all the blood: it may alter it once for all. For, unsearchable as the changes it effects may be; inconceivably minute as the difference must be between the blood before, and the blood after vaccination, yet, in many instances, that difference is perpetuated; in nearly all it is long retained; for by assimilation, the altered model is precisely imitated, and all the blood thereafter formed is insusceptible of the action of the vaccine matter.

In another set of diseases we see an opposite, yet not a contradictory, result. In these, a part once diseased is, more than it was before, liable to be affected by the same disease; and the liability to recurrence of the disease becomes greater every time, although in the intervals between the successive attacks the part may have appeared quite healthy. Such is the case with gout, with common inflammation of a part, as the eye, and many others, in which people become, as they say, every year more and more subject to the disease.

I do not pretend to determine the essential difference between the two classes of disease in these respects, in which they are antipodal; but in reference to the physiology of the formative process, they both prove the same thing, viz. that an alteration once produced in a tissue, whether by external influence, or by morbid material in the blood, is likely to be perpetuated by the exactness of assimilation, *i. e.* by the constant reproduction of

parts in every respect precisely like their immediate predecessors.

But it will be said, the rule fails in every case (and they are not rare) in which a disease that usually occurs but once in the same body, occurs twice or more; and in every case of the second class in which liability to disease is overcome. Nay, but these are examples of the operation of that other, not less certain, though, as it seems, less powerful and more slowly acting, law,—that after a part has been changed by disease, it tends, naturally, to revert towards the perfect state. Most often the complete return is not effected; but sometimes it is,—and the part, at length, becomes as if disease had never changed it.

I will here refer again to what was said in the first lecture concerning the blood's own assimilative power. After the vaccine and other infectious or inoculable diseases, it is, most probably, not the tissues alone, but the blood as much or much more than they, in which the altered state is maintained; and in many cases it would seem that, whatever materials are added to the blood, the stamp once impressed by one of these specific diseases is retained; the blood exactly assimilating to itself—its altered self—the materials derived from the food.

And this, surely, must be the explanation of many of the most inveterate diseases,—that they persist because of the assimilative power of the blood. Syphilis, chronic lepra, eczema, gout, and many more, seem thus to be perpetuated: in some form or other, and in ever varying quantity, whether it manifests itself externally or not, the material they depend on is still in the blood; because by assimilation the blood constantly makes it afresh out of the materials that are added to it, let those materials be almost what they may. The tissues once affected may (and often do) in these cases recover; they may seem even to have regained their right or perfect composition; but the blood, by assimilation, still retains its taint, though it may have in it not one of the particles on which the taint first passed: and, hence, after many years of seeming health, the disease may break out again from the blood, and affect a part which was never before diseased. And this appears to be the natural course of these diseases, unless the morbid material be (as we may suppose) decomposed by some specific; or be excreted in the gradual tendency of the blood (like the tissues) to return to its former state; or, finally, be, if I may so speak, starved by the abstraction from the food of all such things as it can possibly be made from.

In all these things,—as in the phenomena of symmetrical disease,—we have proofs of the surpassing precision of the nutritive process,—a precision so exact that, as we may say, a mark once made upon a parti-

cle of blood, or tissue, is not for years effaced from its successors. And this seems to be a truth of widest application, so that I cannot doubt that herein is the solution of what has been made a hindrance to the reception of the whole truth concerning the connection of an immaterial Mind with the brain. When the brain is said to be essential, as the organ or instrument of the Mind in its relations with the external world, not only to the perception of sensations, but to the subsequent intellectual acts, and, especially, to the memory of things which have been the objects of sense,—it is asked, how can the brain be the organ of memory when you suppose its substance to be ever changing? or, how is it that your assumed nutritive change of all the particles of the brain is not as destructive of all memory and knowledge of sensuous things as the sudden destruction by some great injury is? The answer is, because of the exactness of assimilation: the impression once made upon the brain, whether in perception or in intellectual act, is fixed and there retained; because the part, be it what it may, which has been thereby changed, is exactly represented in the part which, in the course of nutrition, succeeds to it. Thus, in the recollection of sensuous things, the Mind refers to a brain, in which are retained the effects, or, rather, the likenesses, of changes that past impressions and intellectual acts had made. As, in some way passing far our knowledge, the Mind perceived, and took cognizance of, the change made by the first impression of an object acting through the senses on the brain; so afterwards, it perceives and recognizes the likeness of that change in the parts inserted in the process of nutrition.

Yet here also the law of tendency to revert to the former condition, or else the law of change with advancing years, may interfere;—the impress may be gradually lost or superseded, and the Mind—itsself, in its own immortal nature, unchanged, and immutable by anything of earth,—no longer finds in the brain the traces of the past.

Such appear to be the principal conditions essential to the nutrition of a part;—failure in any of them has for its necessary consequence disease,—and disease seems due to failure in the conditions, much more often than to any imperfection in the very power, of nutrition.

But what this power is, and what is the exact process of assimilation, are subjects of most difficult inquiry. I will endeavour, as I proposed, to state what is most probable concerning the process.

You may remember that I spoke of the waste, or wear and tear, of the body, as that against the effects of which the formative process is directed; and referred it to two

principal sources, namely, the deterioration which every part suffers in the exercise of its function; and, the natural degeneration or death to which every part is subject after a certain period of existence, independent of the death or degeneration of the whole body, and, in some measure, independent of the discharge of function.

The first question, therefore, in the consideration of the nutritive process, may be,—what becomes of the old particle; the one for the replacement of which the process of formation is required. In answer,—we must, probably, draw a distinction between the parts which die, and those which only degenerate, when they have finished their course. Those which die are cast out entire: those which degenerate are disintegrated or dissolved, and absorbed. We seem to have a good example of this difference in the fangs of the two sets of teeth; those of the deciduous ones degenerate, are decomposed so as to become soluble, and are absorbed; those of what are called permanent,—more properly, those of teeth which are not to be succeeded by others deriving germs from themselves—die, and are cast out entire. And we may probably hold it as very widely true, that, as Mr. Hunter was aware, living parts alone are absorbed in the tissues: dead parts, it is most probable, however small, must be separated and cast out; and, as the phenomena of necrosis shew, this must be accomplished, not by the absorption of the dead parts themselves, or their borders, but by the absorption or retirement of the adjacent borders or surfaces of the living parts. Now, all external, all integumental, parts appear thus to die, and to be cast out entire from the body; but we have no certain knowledge of the changes they may undergo before they die.

In regard to the changes which take place in the degeneration that precedes absorption of the old particles, we have again no certain—nay, scarce any probable—knowledge. Chemistry has, indeed, revealed much concerning the final disposal of the old materials,—finding their elements in the excretions; and proving that, invariably, the process is one of descent towards simplicity of organic chemical composition,—one of approximation towards inorganic character,—and, perhaps always, one accomplished by the agency of oxygen. But we have no ground for assuming that the whole process by which, for example, urea is formed from worn-out muscle, is accomplished at the muscle itself; or that in any case, the deterioration by oxygen is effected at the deteriorated tissue: it is more likely that the principal part of this process of change is accomplished, after absorption, in the blood itself.

What the change in the part itself is, we

do not know; I can only suggest two things: first, that in parts of active function, as the muscles, the products of deterioration by exercise are probably different from those which are formed in the spontaneous degeneration in the inactive state. For, the repair of the deterioration in the former case is much more complete than in the latter: parts that thus spontaneously degenerate in an inactive state, degenerate constantly more and more; so that for the tissues, as for most things, it is better to wear out than to rust out. And, secondly, I would suggest that the frequency with which fatty matter is found in parts that have simply degenerated, may indicate that it is one of the products of this degenerative transformation in most of the tissues. But of this I shall have to speak hereafter.

With regard to the formative portion of the process,—that by which the old particle, however disposed of, is to be replaced,—it is probably always a process of development,—a renewal, for each particle, of the process which was in simultaneous operation for the whole mass in the original development of the tissue:—i. e. the fibre (for example) which is to be formed anew in a muscle, passes through the same stages of development as those did which were first formed in the embryo. We are led to this conclusion, not only by the evident probability of the case, but, first, by the analogy of the hair, the teeth, the epidermis, and all the tissues we can watch. In all, the process of repair or replacement is effected through development of the new parts. And, secondly, by the existence of nuclei or cytoblasts in, I think, all parts which are the seats of active nutrition. For these nuclei, such as are seen so abundant in strong, active muscles, are not the loitering, impotent remnants of the embryonic tissue, but germs or organs of power for new formation. Their abundance is, I think, directly proportionate to the activity of growth. Thus, they are always abundant in the foetal tissues, and those of the young animal; and they are more plentiful in the muscles and the brain than, so far as I know, any other tissue of the adult. It is interesting, too, and significant in this regard, to notice their absence or infrequency in the nerve-fibres of the adult, which in so many points are comparable with the muscular fibres. And to these evidences of their power I may add, that their disappearance from a part in which they usually exist is a sure accompaniment and sign of degeneration.

As arising from this consideration, I would suggest, for a subject of very interesting inquiry, the difference which we may perceive between what may be called nutritive reproduction and nutritive repetition. I may illustrate my meaning by reference

again to the teeth. In our own case, as the deciduous tooth is being developed, a part of its productive capsule is detached, and serves as a germ for the formation of the second tooth; in which second tooth, therefore, the first may be said to be reproduced, in the same sense as that in which we speak of the organs by which new individuals are formed, as the reproductive organs. But in the shark's jaws, in which we see row after row of teeth succeeding each other, the row behind is not formed of germs derived from the row before: the front row is simply repeated in the second one, the second in the third, and so on.

So, in cuticle, the deepest layer of epidermis-cells derives no germs from the layer above them: their development is not like a reproduction of the cells that have gone on towards the surface before them: it is only a repetition.

Probably we shall find hereafter an analogy in this respect between tissues and whole animals; and that, as in the latter, the capacity of regeneration of lost parts is in direct proportion to the degree in which the members of the body are only repetitions one of another, so in the tissues, much of the difference in the degree of repair they severally undergo after injuries or diseases, is connected with the ordinary mode of nutrition by repetition or by reproduction. When the whole cuticle of a part is removed, it may be again formed by repetition; but when a portion of muscle is removed, its germs are taken with it, and it is not reproduced.

In the development of each new particle, it is worth remembering that it is made, in successive stages, like what the old particle *was*, not like what it is: as we see in the young hair following the course of the old one—just as the child is made like, not what his father is now, but what he was at his age. The new particle is, therefore, not made after a present model—a fact very characteristic of the difference between assimilation and the ordinary process of the growth of crystals.

I propose now to consider, though as yet only generally, the second variety of the formative process—Growth—in health and in disease.

This consists in the increase of a part or of the whole body by addition of new material like that already existing. The essential characters of the organ or tissue are maintained, but its quantity is increased, and thus it is enabled to discharge more of its usual function.

For a general expression of the course of events, we may say that the development and the growth of the body go on together till all the natural structures are attained;

and that then, development ceases, and growth goes on alone till the full stature, and the full proportion of each part to the rest, are gained. But this is only generally true; for we cannot say that all development ceases at a determinate period, since some organs may go on to be developed when many others are complete. Neither can we assign the period of terminated growth; since, not only is the period, even stated generally, very various in different persons, but, some parts, unless placed in unfavourable conditions of disease, continue growing to the latest period of life. M. Bizot and Dr. Clendinning have proved, of the heart and arteries, that their average size regularly increases, though with a decreasing ratio of increase, from childhood to old age, provided only the old age be a lusty one.* And this is a real growth; for the heart not only enlarges with advancing years, but its weight augments, and the thickness of its walls increases; so that we may believe it acquires power in the same proportion as it acquires bulk—the more readily, since the increased power is necessary for the increasing difficulties put in the way of the circulation by the increasing rigidity of the parts.

It may be that the same is true of some other parts. This certainly is true—that any part, after it has attained its ordinary dimensions, according to the time of life, may grow larger if it be more exercised: in other words, every part has, throughout life, the power of growing, according to its particular needs, in correspondence with the degree in which its function is discharged.

Now, when such growth as this is the result of the natural, though almost excessive, exercise of a part—as of the limbs, for example, during hard work—we regard it only as an indication of health, and its result is admitted to be a desirable accession of strength. But, when such growth in one part is the consequence of disease in another, it is commonly described as a disease,—it bears the alarming name of Hypertrophy,—and it comes to be a subject of consideration in Morbid Anatomy.

But in both these cases the process of growth is the same, and is according to the same rules; and the tendency of the process of genuine hypertrophy in disease, like that of healthy growth in active exercise, is always conservative. I say “genuine hypertrophy,” meaning, under that term, to include only the cases in which the enlargement of a part is effected with development, or with increase of its natural tissue. To include nearly all enlargements, as some do, under the name of hypertrophy, leads only to confusion.

* See the Croomian Lectures delivered by Dr. Clendinning in 1838; reported in the *LONDON MEDICAL GAZETTE* for 1837-8, vol. xxii. p. 450.

The rule, then, concerning hypertrophy is, that so long as all conditions remain the same, after the attainment of the average size, each part of the body merely assimilates, retaining its state, or, at most, growing at a certain determinate slow rate; but when the conditions alter, so that a part is, or needs to be, more than usually exerted, then it manifests a power of renewing or accelerating its growth. As we may say, each healthy part has a reserve-power of growth and development, which is put forth in the time of emergency.

The converse is equally true: that, when a part is less than usually exercised, it suffers atrophy; so that the whole rule may be that each part nourishes itself according to the amount of function which it has to discharge. We may constantly see this in many more examples than I need refer to. The simplest case that can be cited is that of the epidermis. In its original formation, even before it has come into relation with the external world, it is formed on the several parts of the body—take, for example, the back and the palm of the hand—in different quantity and kind adapted to the several degrees in which the cutis it has to protect will be exposed to pressure, friction, and the influence of other external forces. Not only is its original quantity and construction on these parts different, but its rate of growth is so; for, though the back of the hand loses comparatively little by friction or otherwise, yet its epidermis does not grow thick; and though the palm loses more, yet its epidermis does not grow thin. So, then, both in original construction, and in rate of nutrition, the epidermis is thus adapted to the amount of function it has to discharge—that is, to the amount of protection it has to afford. But suppose now, that, by some new handicraft, the amount of exercise of the epidermis is increased; its rate of waste is increased in the same proportion, yet it does not grow thin—nay, it grows thicker, till it is completely adapted to protect the cutis from the greater sources of injury to which it is now exposed: it puts forth its reserve-power, which is enough not only to repair all amount of waste within certain limits, but, further than this, to increase the quantity of the tissue to the amount required for the discharge of its increased functions.

What we can see in this case of the cuticle, we may be sure of for other tissues. For example, in a muscle: or in this heart, by disease of the valves, an obstacle is put in the way of the circulating blood: it is held back at the heart: and the heart, or one of its cavities, acts with additional force to drive it on. But, as we know, the more of action in a muscle, the more consumption of the tissue; so that we might now expect a diminution of the heart. On the contrary,

it enlarges,—it becomes hypertrophied,—its reserve-power of nutrition not only meets the immediate exigencies of the increased consumption of its tissue, but produces tissue enough to act with the additional power required by the increased difficulty of the circulation.

Such are the effects of growth in examples of hypertrophy. Let me add, that, to meet the increasing difficulties of these and the like cases, a part may do more than grow—it may develop itself,—it may acquire new structures fitted for higher functions and the exercise of greater power. For example, in the most ordinary hypertrophy of the heart, the muscular tissue is developed to more robustness. In the pregnant uterus, such fibres are developed as are not seen in the unimpregnated state; and the change by development, which in pregnancy is natural, is often imitated by disease, when, by the growth of fibrous tumors in it, the uterus is developed, and grows till it attains the size, the structure, and even the full capacity of action, of the pregnant organ. In several of such cases (as in this) the uterus has at length imitated the course of labour, and delivered itself of the tumor by its contractile power.

A similar change, by development and growth of muscular fibres, may occur in the gall-bladder, as this specimen shews, in which slender bundles of fibres appear decussating each other, and prominent, like the fasciculi of a columnar urinary bladder, on the inner surface of the organ.* A similar example of the development of organic muscular fibres in an obstructed ureter has also been accurately recorded by Tourtual.†

We have an example of development of a secreting structure in the bursa, which, as Hunter has displayed it, is produced under a corn. The corn itself is a kind of hypertrophy, tending to shield the cutis from unnatural pressure; but, itself becoming a source of greater trouble than that against which it was directed, it gives rise to the development of a bursa beneath it, which may, for a time, more effectually protect the joint beneath, by diffusing the pressure over a wider extent of its surface.

Let me repeat, then, that this hypertrophy, as we call it, though it happens in circumstances of disease, is yet in general, so far as itself is concerned, a process of full and vigorous health, serving to remedy or keep back the ill effects that would ensue from disease in some other part. It is, in

a less degree than the repair of a fracture or other mechanical injury, an instance of the truth that we are provided for accidents and emergencies; framed not merely to live in peace and sameness, but to bear disturbances; to meet, and balance, and resist them, and, sometimes at least, to counteract them.

As we might suppose, all the conditions necessary for ordinary nutrition are equally or more necessary for this extraordinary purpose. Thus, for the condition of appropriate blood, one of the most interesting studies is to watch the effects of coincident disease on the occurrence and progress of hypertrophy, especially that of the heart; and in some of these cases death appears to be the consequence of impairment of the blood, which can no longer maintain the heart in the excited nutrition required for its increased functions.

We find, moreover, very constantly, that, to insure sufficient blood to the grown or growing part, the main arteries and veins belonging to it are enlarged. This is usually well shewn in the enlarged coronary arteries of the hypertrophied heart,—an instance analogous to the enlargement of the arteries of the pregnant uterus, and the growing antlers of the deer, and many others. According to all analogy, we must consider this increase of the blood-vessels to be secondary. As in the embryo, parts form without vessels, till, for their further nutrition as their structure becomes more complex, the passage of blood into their interior becomes necessary,—so we may be sure it is here. It is, indeed, strange that a part should have the power, as it seems, of determining in some measure the rate at which blood shall flow into it and through it; but so it is, and nearly all examples of hypertrophy are examples of the fact; though, as I shall hereafter shew, there are instances in which hypertrophy is the consequence, not the cause or precedent, of increased supply of blood.

With the increased supply of blood proportioned to the increased nutrition of the growing part, the nerves may also increase; as in the pregnant uterus and the hypertrophied heart. So, at least, I believe; but probably I need not apologise for evading the discussion of this matter.

DETECTION OF MERCURY IN THE PUS FROM A BUBO.

IN order to disperse a bubo a man had been ordered to rub in several ounces of mercurial ointment. Poultices were applied, and when the gland was opened, the pus was collected and analysed. It yielded unequivocal traces of quicksilver.—*Heller's Archiv*, 1847, H. 2, S. 185.

* The specimen was exhibited from the Pathological Museum of the College of Surgeons Oct. 53. A further description of it may be found at page 5 of the Pathological Catalogue, vol. I.

† *Müller's Archiv*, 1842.

NOTES OF
A CLINICAL LECTURE,
DELIVERED

By CÆSAR HAWKINS, ESQ.

At St. George's Hospital, May 18th, 1847.

[Taken by Mr. WALTER THOMSON.]

LECTURE III.

1. *Division of ham-string tendons for disease of knee-joint.*
2. *The same with excision of large cicatrix.*
3. *Extension of limb in cases of disease of hip-joint.*
4. *Dislocation of hip into thyroid foramen, complicated by old disease.*
5. *Abscess in anterior mediastinum.*
6. *Medullary disease of the testis.*

GENTLEMEN,—I will to-day make a few remarks, for which some cases now in the house will serve as a text; and I will first direct your attention to a case, which is instructive in many particulars, as showing what we may sometimes do to obviate the necessity for amputation in cases where disease of a joint has rendered a limb useless, but where there are no active symptoms present.

Emma Elton, age 21, was admitted on Nov. 18th, 1846, into Princess Ward, with the following history:—"About five years ago the right knee-joint became much enlarged, but without pain. It was treated with leeches and blisters, and the enlargement was greatly reduced. At the end of a year, having had no pain in the interval, the enlargement returned, and was attended by pain, but by resting it, these symptoms subsided. She had several attacks of this sort. About two years since the pain and enlargement again returned, being much more severe than before, and she was under treatment for six months without much relief. The contraction of the limb (for which she was admitted) appears to have commenced at this time, and the leg is now bent to an acute angle with the thigh, and there is partial dislocation of the tibia and fibula backwards, and some rotation of the foot and leg outwards, but this is the case only to a small degree. There is very little motion of the joint, but it does not seem to be in an ankylosed condition."

Here, as you see, the disease had been going on for upwards of five years, returning frequently, and unattended with any great amount of pain, and was probably a mixed case of scrofulous disease of the bone, with inflammation of the synovial mem-

brane. The tibia and fibula have been drawn backwards behind the condyles of the femur, and kept in a bent position; so that the patella is quite buried between them in consequence of the great hollow formed anteriorly when the knee is much bent. Nor could the leg be moved from this position, the attempt to do so causing such great suffering. The limb had become entirely useless to the patient, but she was naturally anxious to save it if possible, and I decided upon endeavouring to render the limb serviceable, and made an attempt which has hitherto been attended with success.

When a knee has been kept for any length of time in a bent position, if any degree of motion remain, showing that no bony ankylosis exists, and the symptoms are in abeyance, it is right to endeavour to restore the limb to its proper position; and there are few cases in which well-directed efforts will not be attended by success. Gradual extension by means of such an apparatus, as you have seen used for Elton, must be employed; consisting of an angular splint, with a hinge at the angle, the lower part being well fitted and carefully fastened to the leg, and the upper part to the thigh. A strap also must be made to cross the knee, and to prevent the instrument from receding from the hollow of the ham. The whole is to be well padded so that no injurious effects may arise from pressure. A screw connects the upper with the lower part, by turning which extension may be made in the most gradual manner; and thus the limb can be brought by degrees to the straight position, and the patient be enabled to walk,—but, of course, generally with a stiff joint. When, however, the altered position has existed for a very considerable time, as it has in this case, the flexor muscles, by contracting, render the joint incapable of being extended, and it becomes necessary to divide their tendons. Before doing this, you must be careful to ascertain that there is no actual disease going on at the time in the joint, as if there be, the attempt to extend the limb will bring on severe symptoms. Ascertain also that there is no true osseous ankylosis, for if there be, any attempts to straighten the limb must fail. But, in scrofulous disease, and in cases of stiff-joint from chronic synovial inflammation, the ankylosis is commonly caused by the throwing out of lymph, with little disposition to osseous deposit, which admits of elongation by force gradually applied. In the case before us, it was quite evident that some slight motion still remained between the tibia and femur, pain being occasioned by the attempt to straighten the joint. It was not quite so clear whether the patella was ankylosed; by fixing it between my thumbs,

placed at its upper and lower margins, I thought I could detect some degree of motion perpendicularly, but of course, from its position between the condyles, it would admit of no lateral motion.

On the 26th, I divided the three flexor tendons—the biceps on the outside, and the semi-membranosus and semi-tendinosus on the inside; and the division of tendons by sub-cutaneous incision, instead of cutting down upon them, is a considerable improvement in modern surgery. It is an operation of no difficulty. The patient is turned upon the face, the limb extended as much as possible, so as to make the tendons tense, and the tendons are then divided with a small narrow knife made for the purpose. Only two punctures will, in general, be necessary in this situation, as the semi-membranosus and semi-tendinosus are usually found together. It was not necessary in Elton's case to divide any bands of fascia,—a proceeding which is sometimes required,—but there was a tight cord, stretching down the middle of the ham, which one of the gentlemen around thought had better be divided, but which was, in fact, the popliteal nerve, and which differed from any tendon, inasmuch as it extended a longer distance downwards than either flexor tendon could do, and it occupied a situation more prominently in the centre of the ham than a band of fascia would have occupied. The nerve receded in less than a fortnight after the operation so as not to be felt. The instrument was applied about four days after the operation, when union was perfect; and by it extension was made, slowly and gradually, to a great extent, as our notes show, from time to time, till Feb. 27th, when it is said:—"Limb much straighter. Now, however, the gastrocnemius being stretched, she cannot flatten the foot,"—a circumstance which you would expect; for the bent position of the limb would have caused the gastrocnemius to become contracted, as well as the other muscles: and being unable to yield, where the limb was extended, it would, of course, have the effect of raising the heel.

On May 7th, I divided the tendo Achillis by the sub-cutaneous section, and the foot is now bent to nearly its proper angle, and the limb has almost recovered its natural position.

At one time, February 24th, I was afraid, from the occurrence of pain on each side of the patella, and from there being some fulness about the joint, that the disease was about to return, but, upon leaving off the splints for a few days, it in a great measure subsided. The tibia and fibula are still situated a little more backwards than natural, and it remains to be seen whether the limb will bear the weight of the body without any

ill effects. Altogether the case affords you an example of what may be attempted,—I hope with ultimate success,—instead of causing a patient to run the risk of an amputation, or to suffer the inconvenience of the joint remaining in a position which would not admit of even the assistance of a wooden leg.* No inflammation occurred from the division of the tendons; it, in fact, very seldom does: and in order to lessen the chance of reproducing the disease, the limb must be kept perfectly at rest, and the extension be very gradually and carefully proceeded with.

But other causes may render a somewhat similar proceeding necessary, besides disease of the joint itself, and may succeed under much more formidable operations. I remember a patient, under my care, in whom there had been venereal ulceration of the back of the thigh and leg, which had been followed by contraction of the cicatrix, with deposit of a hard firm substance in the texture of the skin, rendering the limb totally immovable, and placing the leg in such a position that the heel was in contact with the buttock. I dissected the cicatrix completely from its connections, and removed it, exposing the fascia, and, in some parts, the three flexor tendons, which, standing prominently out, I was obliged to divide them, with some bands of fascia also. The portion of cicatrix I removed was some thirteen inches long, and four and a half in thickness in the centre, and the wound was the whole breadth of the ham. Of course, in such a case, I could not make extension immediately after the operation, but when the sloughy state, which usually follows the removal of cicatrices, had subsided, I applied an instrument similar to the one you have seen used in Elton, and by it brought the limb into a perfectly straight position, and the patient was enabled to walk firmly with it when he left the hospital. The case shews you the great advantage that may be derived from division of the ham-string tendons, though, of course, there was much risk from fever and sloughing, and the chance of secondary abscesses; but the wound having healed, and the joints being unaffected, there was no chance of relapse, which there must be when the operation is performed after serious disease of the knee-joint.

But it is not in cases of disease of the knee-joint alone that you are capable of interfering with benefit; much may be done in affections of other joints, after the acute symptoms have subsided. You may often apply the same principle to remove the deformity produced by hip-disease; when the

* Shortly afterwards she left the hospital with symptoms of phthisis coming on.

hip is affected, you may have real or apparent shortening of the lower limb from three causes.

One cause is a habit the patient has of walking on the toes only of the affected side, the joint not being destroyed. The pelvis of the same side is consequently raised; a curvature of the spine takes place to compensate for this, and an appearance of shortening is given to the limb. The shortening is only apparent, however, for by measuring, in these cases, from the spinous process of the ilium to the patella, the distance will be found the same on both sides.

In another form, shortening actually does take place. The ulcerative process destroys part of the acetabulum, perhaps, more frequently, it is the femur that suffers; and the head of the bone being no longer kept in its place, is dislocated; and as this takes place from muscular action, it generally lies upon the dorsum ilii. A new joint may be formed in this situation in dislocation from accident, but not when it takes place from disease, in which case, a kind of false ankylosis is formed by the pouring out of lymph, which becomes organized, and is sufficiently strong to bear the weight of the patient's body, and to enable him to walk with a high-heeled shoe. In the third case of shortening, the head of the bone is also dislocated, but it takes place without any loss of substance. In these cases, the disease is generally acute in its character, attended by the throwing out of lymph within the cavity of the joint, and by weakening of the capsular ligament; so that the head of the femur is widely separated from the acetabulum, and a very slight accident is sufficient to dislocate the bone. The deformity may escape notice, perhaps, while the patient is lying in bed, and is often discovered for the first time upon his attempting to walk.

In those cases in which the shortening is apparent only, and arises really from distortion of the pelvis and spine, you may do much good by the employment of suitable apparatus. You remember, doubtless, a boy who was last year in Egremont Ward, and in whom apparent shortening had taken place from this cause, in whom I was able to elongate the limb, that is to say, to draw down the pelvis, so that the foot descended three or four inches before he left the hospital, walking pretty well in a few weeks' time, with the figure restored, unless the disease reappears in the joint. I kept him lying in bed, (a proceeding generally rendered necessary by the disease itself), and passing a belt under the perineum round the sound side of the pelvis, I fastened it to the head of the bed. To a belt placed round the knee a cord was fixed, and to it a weight, in

his case, of half a pound, but you may increase the weight according to the effect it produces. Of course as long as the attention of the patient is directed to the weight, his muscles contract, and resist the extension; but when he is asleep, or has ceased to notice it, the gradual traction causes them to yield, and the weight exerts its force in bringing down the pelvis. Of course, if a high-heeled shoe is employed in such a case, the deformity is likely to be rendered permanent, though it is necessary when there is real shortening of the limb. I have several times seen a child who has had hip-disease, attended by this species of apparent shortening, walking about with a weight attached to the foot, with a view of dragging it down; this appears to me, however, to be ordered on a perfectly wrong principle. If you attach a weight to one foot while he stands or walks, the patient is obliged to raise the pelvis on that side in order to balance the body, thus actually aggravating the defect you wish to remedy. But the same means will be very effectual when the patient is kept in the recumbent posture; either lying in bed, or, if the disease permit, resting upon a sofa, and the limb is gradually brought down, and the spine also improved, if lateral distortion has commenced from the elevation of the pelvis on one side.

In the second form also, (in which there is actual shortening, and the remaining part of the head of the bone is situated on the dorsum ilii,) if extension be continued for some time by a weight, the lymph by which the bone is retained may become elongated, some of its attachments may be loosened, and the head be brought down, so that instead of being situated high up on the dorsum, it may come to occupy a situation close to the acetabulum; and here it will be fixed as firmly and as strongly as if it had been allowed to remain in the situation in which the contraction of the glutei first placed it. Of the good effects of extension in these cases I have seen several instances, when the exact time has been chosen, when the part is quiet after the disease, but has not yet been firmly and permanently fixed in its new situation. When you have done all the good you can obtain by this traction, and the parts have become firmly fixed in their new situation, a high-heeled shoe may be worn; and it is better, when the shortening is very great, not to have it made to raise the foot quite so high as to prevent all obliquity of the pelvis in after life, but rather to divide the necessary deformity between the limb and the spine, not allowing so much lateral distortion of the spine as would result from a shoe of the same thickness as the other, nor yet ordering such an immense thickness of shoe as would

allow no twist whatever in the spine, but would at the same time attract too much attention to the shoe.

Thirdly, in those cases in which the head of the bone is suddenly thrown out from its cavity, it is very seldom that you have an opportunity of being of much service: you cannot, while the disease is still active, employ the force necessary to be used as in common dislocation, and the socket soon becomes filled up. The dislocation may escape observation also, and thus you will be prevented from rendering assistance.

A curious case of recent dislocation came under my care last year, which some of you may perhaps remember, which was rendered very obscure from the effects of former disease, and which may deserve your attention for a short time, in connexion with the subject of shortening from disease of the joint, as it was much benefited by extension.

Eliza Britchford, *æt.* 22, was admitted on July 30th, 1846, into Drummond Ward, with the following history and symptoms:—Eleven years ago, she was in the hospital complaining of pain in the knee, of which she was cured; ever since, the left leg has been the shorter of the two, and she has been in the habit of supporting herself upon the right, which may account for the obliquity of the pelvis, the anterior superior spinous process on the right side being a good inch higher than that on the left. Two months ago she was kicked upon the left hip, which has since been causing her some pain; a week ago, she fell down stairs, the left limb being, as she expressed it, "twisted under her." Since this last accident, she has been unable to walk, and the pain in the hip has been such as altogether to prevent her lying upon that side. The foot does not appear to be turned either outwards or inwards, and the limb, from the spinous process to the knee, is about half an inch shorter than the right; the limbs are separated, and very severe pain is produced by any attempt to approximate them. When standing, the body is bent forwards, and the knee advanced, giving to the leg all the appearance of lengthening, while, in whatever position she may be placed, the sinking of the trochanter and the flatness of the hip, both anteriorly and laterally, are conspicuous. On careful examination of the pelvis, no crepitus can be detected.

Here, the pain in the knee was probably caused, as it often is in children, not by disease in the knee-joint itself, but by an affection of the hip; and the latter part of the notes which I have read, forms a curious instance of the presence of some of the symptoms of dislocation into the thyroid foramen, with the absence of an important one which ought to have been present, namely, lengthening of the limb. The

limb was abducted, and incapable of being brought to the opposite side, but it was shorter, instead of being longer, as it ought to have been: this could be accounted for by there having been previous disease in the joint, succeeded by some shortening from absorption of part of the head, or imperfect growth of the whole bone; so that, although the recent accident might have produced some lengthening, yet it was not sufficient to bring the two limbs on an equality as when the two thigh bones are of similar length. In a consultation with my colleagues, we thought there was a sufficient absence of prominent symptoms of disease of the joint to make it probable that there was a recent dislocation, and, therefore, to warrant an attempt being made to bring the head of the bone back into its place. After having placed her, therefore, under the influence of tartarised antimony (a medicine which in these cases will perhaps be superseded by the ether, which latter remedy will certainly not be attended by the risk of exciting inflammation of the stomach, as happened to a patient whose hip I reduced some months ago, after giving him about six grains of tartarised antimony before a little nausea was produced), extension by means of pulleys was employed, and our notes for the 31st are—"Very considerable extension was made for about an hour, without any apparent alteration in the position of the bone, although, from the grating sensation which was more than once communicated to the finger, there was reason to believe that some alteration had taken place; but this sensation was never adequate to what one would expect from the sudden adjustment of the head of the femur into its socket. The sinking of the trochanter and the flatness of the hip appeared to be lessened, and she could directly move the limb, and bear their approximation much better." The benefit from this was most apparent. On the next day we read—"Has certainly increased power over the limb, and none of the difficulty or pain before experienced in drawing the left knee to the right." Nine days after—"Had a little pain in the knee yesterday and to-day," and leeches were ordered to be given. The leeches relieved the pain; and the notes for the 10th are that "the limb moves easily in any direction, but much flexion causes pain." And a week after this she left the hospital, with a tolerably good use of her leg, walking nearly as well as before the accident.

This case is in some respects remarkable, as affording an instance of the difficulty in detecting the nature of a recent accident produced by disease occurring at a remote date, which might have remained unrelieved, with permanent lameness, if unrecognised, but which fortunately admitted great benefit

from surgical means, the dislocation being reduced.

The next subject which I will bring before you is a case the exact counterpart of which I have never before seen, and to which I am anxious to call your attention, as the circumstance which makes it peculiar may perhaps shortly disappear. It is a case of abscess in the mediastinum connected with the sternum. The patient, Emma Sewall, was admitted on April 7th with lupus non exedens of the face, more especially of the alae of the nose, which is the situation in which the disease most frequently appears. I will not occupy your time by entering into a consideration of this affection. She was just beginning to be put under treatment, when she was attacked with fever, and erysipelas of the head and face shewed itself. It was not a very severe attack, however; for, three days after, it is reported as "not spreading," and on the following day, "redness and tumefaction almost disappeared." On the 23d, it is noticed that the "lupus is about the same;" so that the erysipelas had not here, as it sometimes has in a most remarkable manner, the effect of healing the ulcerated surface. I have seen cancerous ulcers even, which had been open for years, heal up firmly and completely for many months under an attack of erysipelas.*

On the 24th we find she had "cough." On the 25th the notes are—"Pain in chest worse on inspiration; difficulty of breathing; rather more cough." On the 26th—"Cough more violent; no expectoration; tongue red at tip, loaded; pulse 112, fuller." I saw her on this day, and, there being a distressed and laboured action of the heart, and some crepitation being, I thought, perceptible over the præcordial region, made me suspect that there might be effusion there, and, consequently, she was placed under Dr. Nairne's care, who gave her some calomel and Dover's powder, with a saline draught, containing some Vin. Ant. Tart.

On the 30th it is noted—"An abscess over the central part of the sternum, about the size of a crown-piece, was opened; matter thin and bloody, with flakes of lymph. The probe passes *through* the sternum into the ant. mediastinum; no impulse on coughing; the quantity of pus is greater than the swelling indicated." There had been some tenderness complained of there before, but this was the first time the swelling was noticed.

Here, then, is a case in which an abscess formed and penetrated the sternum, so that a probe passed through the opening, grated

* This effect was afterwards produced on the ups in this case, and she shortly afterwards left the hospital, better than for some years before.

against the bone on each side, and came in contact with the soft parts within the cavity of the chest. The bronchitis which appeared before the abscess was noticed, and became worse afterwards, depended probably upon irritation, caused by the abscess in the mediastinum.

On the 2d, we find it noticed—"Crepitus to be felt between the manubrium and gladiolus." The thumb placed upon the upper and lower part of the opening produced a sensation of crepitus, which, had the disease occurred a few years later, would not have existed, for the abscess is probably situated in the cartilage connecting the first and second bones of the sternum, and it is against these bones that the probe grates in passing. Perhaps the crepitus I perceived in the first instance with the stethoscope was from this cause, but I examined the case very hastily, when I transferred her to the physician's care. Since then she has had great purulent expectoration, but her health is now improving, and the pus diminishing in quantity. Grating is still to be felt, however, with the probe, especially on the right side, and it is not unlikely that a portion of bone there will exfoliate, the rest becoming permanently ankylosed to the manubrium. You will often see abscesses connected with the sternum, in consequence of the formation of venereal nodes, and occasionally in connection with scrofula and caries. After these cases have gone on for some time, they will frequently make an opening entirely through the bone, and you will see in most museums preparations of the sternum, with openings in them large enough to admit a finger. But cases similar to the one upstairs are not common; and it is not clear whether the abscess is simply of a scrofulous nature, or whether it is a recent collection of matter without any pre-existing disease; but it is most probable that it is old formation, only greatly aggravated by the occurrence of the erysipelas, and not owing solely to the erysipelas, since it never came so low as the seat of the abscess. You will see a proposal made of trephining the sternum in cases of abscess forming in the mediastinum. There is probably in these cases not sufficient evidence of the existence of matter in that situation to give grounds for such an operation; and, if the abscess have burst, nothing need be done so long as the pus comes away freely, as it does in our patient, otherwise the opening in the bone could easily be enlarged.

It is not uncommon to have similar abscesses form on the inside of a rib, and you saw an instance in a patient named Thomas Bennett, who was in Egremont Ward in February last, and who had a large abscess in the thorax in connection with the diseased rib. I did not in his case remove

any of the bone, but I had a case a little more than a year ago, in which that proceeding was necessary. It was a boy, from whom I removed a portion of a rib anterior to the angle, in consequence of an abscess having formed of a similar description, the cavity being about four inches long, but without any disease of the lung, while Bennett was probably dying of phthisis, and also without any irritation and inflammation of the bronchi, such as was excited in Sewell by the abscess of the sternum.

There is one more subject which I will bring before your notice to-day. You may remember that in a former lecture I described to you the symptoms of chronic inflammation of the testis, by the help of several cases which had gone on to ulceration, abscess, and fungous projection.* In that lecture I told you that there were two stages in which its symptoms were not unlike those of malignant disease, namely, early in the disease, and after the fungous has begun to form.

A man was admitted on my last taking-in day, May 5th (whose case you will do well to watch), with the following history:—"He has enlargement of the right testis, which is nearly of the size of a small ostrich's egg, though somewhat more elongated: it is hard and uniform in consistence throughout, except for about an inch at the upper part, where fluid can be felt: it is painful when handled, and there is occasional pricking pain in it when left alone, extending to the loins. The scrotum is red, and the veins are rather enlarged, particularly on the under surface. The vas deferens is not enlarged, and the epididymis cannot be distinguished from the testis. He first observed the testicle begin to swell five months ago, with very little pain. About three months afterwards, it became much more painful, and increased in size more rapidly. Its progress has been much more rapid during the last week. States that he has never had syphilis or gonorrhoea, and is not sure whether he ever received a blow on the testicle. He underwent a course of mercury five weeks ago, of a fortnight's duration, and his gums were very much affected, and are still slightly so. During that time he kept his bed. Leeches and blue ointment have been applied to the testicle, but without any good effect.

There is also a hard, moveable, circumscribed tumor, about the size of a half-crown, and a third of an inch thick in the centre, situated in the structure of the left mamma; there is no pain in it except when handled roughly, and only one part is ele-

vated above the rest. There is no retraction of the nipple nor discoloration of the skin over it, nor adhesion to the skin. He first perceived it three months since. Countenance sallow and unhealthy; has no appetite; has been losing flesh lately.

On the first appearance of this man his case was very like one of chronic inflammation, but on further inquiry into his history there is every reason to believe that it is an instance of malignant disease, fungus hæmatodes, medullary disease, as it is called, a form of carcinoma. The dark appearance of the scrotum, and the enlargement of the veins, might be present in either case; but the vas deferens not being enlarged, and the impossibility of distinguishing the epididymis from the body of the testis make this tumor appear to be probably of the malignant nature. It is very seldom in the chronic enlargement that you are unable to distinguish between these two parts, for, the disease affecting the vessels of both of them, they retain in a measure their relative proportions; while in fungus hæmatodes, it is not generally in the body of the testis, but in some part of the cellular tissue, contained in the tunica albuginea, that the disease begins; and from the disease occupying one part only, it often conceals the structure of the testis, which may, however, generally be detected, if carefully examined, unaltered, and often spread out over the surface of the new formations: neither is the cord usually enlarged, except from the increase of the cremaster muscle in size, from having to support so great a weight; the vas deferens not being enlarged as in the chronic inflammation, though sometimes there is a varicose condition of the spermatic veins, with consequent enlargement of the spermatic cord. I resolved to let him remain under the influence of mercury a little longer, and he is taking a small dose of calomel and opium with sarsaparilla; and three days after he came in, I punctured the upper part of the swelling, and let out the contained fluid, which was of a dark colour, alkaline, and coagulating entirely on the addition of nitric acid; and was, in fact, a hydrocele of a part of the tunica vaginalis, the remainder being adherent to the tumor. The gums became slightly affected by the mercury, and two days ago I diminished the frequency of the dose. The note for yesterday informs us that "he has some pain in back occasionally; health improving; appetite better; fluid has not collected again; tumor is rather more prominent in two parts than it was, one near the upper and one near the lower part of the testicle."

The chief point to make clearly out in these cases is, whether the glands are secondarily affected, as their being so makes

* See MEDICAL GAZETTE, p. 942 of the last volume.

an operation necessarily improper. You may sometimes discover this by feeling a tumor or fulness in the abdomen behind the intestines, formed by the lumbar glands, for these are the glands which are for the most part affected, as they receive the absorbents from the testis. Sometimes, but rarely, an enlargement takes place in a gland situated in the inguinal canal. The glands in the groin are never affected unless the skin be implicated in the disease. You may remember the case of Goodenough, who died with this disease, in whom I recollect pointing out a circumstance which should always cause great suspicion of the lumbar glands being affected; namely, an instinctive contraction of the abdominal muscles upon the slightest pressure being made, sometimes rendering you totally unable to press deeply into the abdomen. In our patient the fingers pass readily enough down. I thought at first that there was some suspicious hardness about the liver, but it has disappeared, and depended probably upon the contents of the colon. He has also, you will observe, a tumor in the breast. If I had seen it without knowing anything of the existence of the diseased testis, I should probably have considered it to be a simple chronic enlargement of the gland, such as not unfrequently occurs in young persons, though it is not common in individuals of the age of our patient. It consists of a hard, firm deposit taking place in the structure of the gland, generally strumous, and disappearing readily under treatment. But the probable existence of a malignant disease in another situation raises the suspicion that this also is of a malignant nature. It has not the character, however, of ordinary scirrhus, and I by no means consider it to be proved to be of that nature. If there should be no worse symptom in our patient, it will perhaps be right to remove his testis. Of the effect of that operation, and of the appearance of the testis after removal, you had an instance in a man named Hornbuckle, whose testicle I removed a short time since for this disease. In him the disease had existed for twelve months, during the two latter of which it had been rapidly increasing. It is not usual for the vessels of the cord to be much enlarged, but in him you saw the veins were very large. I have also seen the spermatic absorbents loaded with medullary matter, but it is more common to find the glands of the abdomen enlarged, without any trace of the disease in the absorbents. This is the preparation of his testis, and you may perceive that there is a great number of cysts imbedded in medullary matter. If there be no evident sign of the constitution being contaminated, you will be justified in removing a testicle affected with this disease.

I removed one from a gentleman six years ago, and up to this time he has had no return of the disease; and I have seen others also of similar kind. A favourable result is indeed very seldom to be expected, less frequently even than in carcinomatous disease of some other parts,—but by operation we get rid of a troublesome and painful tumor, which affects the mind by apprehension, and thus, and by the pain, hastens the deposit elsewhere; so that life is probably prolonged, if a cure is not effected. The disease is sure not to return in the part, because it is completely insulated, and inclosed in a dense covering, making the extension to the skin very rare, and easily detected; the operation is also free from hazard, compared with an amputation of a limb for instance, at least a fatal result is very rare, and the influence of it on the system is sometimes very trifling, as you saw in Hornbuckle, who soon left the hospital after the operation.

Of the condition to which a patient may be reduced by this disease, when left without operation, or when the disease returns after operation, you had a very good instance in a man named Goodenough, who died not long ago; his case being improper for operation on account of glandular enlargement in the abdomen. This case was remarkable also, because it was attended by a total obliteration of the vena cava. After his death the vena cava and aorta were both found imbedded in a mass of enlarged lumbar glands. The aorta was pervious; but the vena cava, as low as the two iliacs, was completely obstructed by medullary matter and coagula; above the mass of glands it was unaffected. A most remarkable circumstance is, that there were no collateral veins found enlarged to carry on the circulation. The vena azygos was somewhat increased in size, but not much, and the mammary and epigastric veins were not at all enlarged. With this total obstruction of the vena cava there was but little oedema of the legs, and when he died there was none whatever. This case also presented another point worthy of your notice. It is not uncommon to find the lungs secondarily affected with medullary tubercles. I thought it probable that they were so in him. There are few stethoscopic signs to point out the disease, as the small parts of the lung affected leave quite enough healthy structure to admit air to pass readily between them as in healthy lungs; but he had for a long time a sanguineous frothy expectoration, which is frequently seen when the tubercles begin to break down, or the intermediate lung to inflame. It turned out, however, to be only bronchial in its nature; but when considering the propriety of removal of the disease in one part, all such occurrences

must be carefully taken into account. The case which is now up stairs differs in several points from the others which you have lately seen; and you will find it of great service to compare the history and progress of several cases of the same disease together. Were it possible that the present case was one of chronic inflammation it would be cured by his present treatment, but I have little doubt that the improvement in his general health will go on, and make him at any rate more fit for operation, if the disease is, as, I believe, incurable.

[The testis has subsequently been removed by Mr. Hawkins.]

Original Communications.

ASCITES AND OBSTINATE VOMITING FROM SCIRRHUS OF THE STOMACH.

By G. OWEN REES, M.D. F.R.S. &c.

A—C—, *stat.* 38, admitted into Miriam Ward, Guy's Hospital, in September 1845, under Dr. Rees. Is thin and emaciated; aspect not in the least degree indicative of malignant disease; has been married thirteen years, and had five children. Her last confinement occurred fifteen months ago, since which time she has always been weak and ailing. She did not lose more blood at this than at previous confinements.

About January last, she felt constant pain in the left side of her chest, which continued in the same situation during nearly two months, and was attributed to suckling. The pain then shifted farther down in her left side, shooting through the abdomen, suddenly across the stomach, and up into the throat, which was followed by vomiting four or five times a day, usually worse after meals, but she is not aware of its having occurred at any particular period after taking food. She continued in this state until the warm weather came on, (about four months ago,) when the vomiting ceased, and she began to improve, but still continued weak. Three months ago she weaned her child, when the vomiting recurred as before. Her abdomen began at the same time to enlarge, and is now quite distended with fluid. No hepatic enlargement, nor any tumor, can be

felt in the abdomen, nor is there tenderness on pressure. Action of the heart natural; pulse 92, weak; bowels act regularly; urine is scanty and high coloured, not coagulable by heat or nitric acid. There is no puffiness of the face, and the feet and legs have never swelled, but the latter frequently feel cold.

She had two sisters who have already died from, and one who is now labouring under, the same symptoms with herself; her father is still living, 80 years old, and perfectly healthy; her mother is stated to have died of "chalk-stone gout."

From the date of admission up to the 7th of October, the treatment consisted in the administration of milk, purgatives, effervescing medicines and soda water, and, latterly, a mixture was prescribed as follows:—

Infus. Cuspariæ, ʒj., *Potass. Iodidi* gr. iiss. *ter die sumendus*.

The milk diet was allowed, as preferred by the patient; more solid food being kept in readiness, in the event of the cessation of sickness.

7th.—Bowels opened by a castor oil draught, containing six minims of tincture of opium; the abdomen feels softer than on admission, but the vomiting continues unabated, occurring almost immediately after the reception of any thing into the stomach. The matters ejected by vomiting contain no blood, and are not otherwise remarkable; urine scanty; pulse weak and rather quick.

8th.—*Adde Syrup. Papav. ʒss. sing. dos. Misturæ*.

10th.—*Ext. Col. Co. gr. x. statim sumend. et Pergat*; continue the soda-water drink.

13th.—Bowels not sufficiently opened by the medicine; has severe pain at the pit of the stomach; and the abdomen is slightly tender on pressure. *Appl. Catap. Sinap. Scrobic. Cordis. Injiciatur Enema Commune statim et Pergat*.

15th.—Bowels not relieved by the injection; still slight tenderness of abdomen. *Pil. Colocynth. Co. gr. x. Pulv. Jalap. gr. v. ft. massa et div. in Pil. iij. st. sumend. Sumat Haust. Sennæ post horas quatuor*.

16th.—Bowels freely relieved yesterday; but the vomiting still continues, and the abdomen is as hard and tense as on admission; since

then she has lost flesh.—The tenderness of the abdomen is removed. *Fiat paracentesis abdominis.*

17th.—She was tapped yesterday, and nine quarts of a serous fluid drawn off. The fluid being now removed, the internal organs became presentable to the hand. There is no enlargement of the liver. A solid substance, not of very hard consistence, can be felt in the left hypochondrium, extending towards the right; it is very tender on pressure. There is also a soft matted feeling under the parietes; and on the right side the rectus muscle very closely simulates an abdominal tumor by its contraction. Pulse still quick and weak; tongue moist and clean; urine passed nearly in natural quantity; vomiting less severe. Sumat. Ol. Ricini, ʒiiss. statim. et Vin. Rubri, ʒiiij. quotidie. Rept. Mistura.—Soda water.

18th.—Vomited very little yesterday and to-day; the oil operated freely; the tumor still exists as above described; there is again a little fluid in the abdomen.

20th.—Feels herself weaker than before; pulse 136, weak; flesh much wasted; vomiting continues incessantly, and she suffers from diarrhoea; the urine scanty. Augeatur Vin. Rub. ad ʒv. quotidie.—Soda water.

22d.—Diarrhoea severe.—Sum. Mist. Crete Aromat. c. Træ. Opil, ʒvj. et Træ. Catechu, ʒj. post sing. sedes liquidas.—Pil. Sap. c. Opio, gr. x. omni nocte, pro supposito. utend.

24th.—Diarrhoea and vomiting less severe; urine very scanty, loaded with lithates; ascites increasing; griping pains continue, with slight tenderness over the abdomen; feels very weak, and can take no nourishment.—Rept. Suppos. Augeatur Vin. ad ʒviiij. soda water. There is nothing remarkable about the dejections or matters vomited.

26th.—Vomiting more severe than ever; diarrhoea has not quite ceased; pulse rapid, and so small as scarcely to be felt; abdomen full of pain, and tender on pressure; every thing is vomited as soon as taken.

27th, 11 A. M.—Pulse thready, and can only be felt occasionally. Takes nothing except the wine. Is sinking fast. Died at 11 P. M.

Inspection 16 hours after death.—The body much emaciated; no general œdema. On opening the abdomen a

considerable quantity of serum flowed out, with some shreds of fibrinous matter. The small intestines presented themselves at once to view, not being covered by the great omentum: the transverse colon could not be seen. On passing upwards to the stomach a fringe was observed bordering its greater curvature to about an inch in depth. Attached to and beneath this fringe was a piece of intestine, corrugated, and so contracted as scarcely to admit more than the little finger. This was the great omentum, thickened and corrugated by malignant deposit, with the transverse colon involved in the disease. The descending colon was very contracted, but without malignant induration; the cæcum was distended with flatus. The stomach was much diminished in size, and its parietes increased in thickness to nearly half an inch, the whole having undergone scirrhus degeneration. The pyloric extremity was very much contracted. When the parts were first presented to view, the gall-bladder, stomach, and transverse colon, were all seen adherent at one point from previous inflammation. Spleen healthy. The kidneys appeared healthy, with the exception that on tearing off their capsules a few small malignant tubercles were observed on their external surface, imbedded in the cortical structure. A few of these were also observed in the more internal structure of the kidneys, and at the points of two of the coronæ uriniferæ. Several patches of scirrhus growth were seen on the surface of the liver, but none on cutting into its structure. Uterus healthy, with the exception of some slight cicatrization at the os; right ovary about the size of the clenched fist, soft and pulpy; surface reddish coloured. The left seemed to be undergoing carcinomatous change. Bladder small, contracted, and empty; peritonæum seemed healthy. On the surface of the lungs there were a few small, hard, malignant spots, but no tubercles in their structure. The heart was small but healthy; the bronchial glands were hardened and black; the mesenteric glands were also hardened. The brain was not examined.

A point of interest in the above case consists in the want of two symptoms which usually present themselves in scirrhus affections of the stomach

before death occurs. 1st, The aspect indicative of malignant disease; and, 2d, the discharge of coffee-ground vomit or blood, as indicative either of transudation or the presence of ulcerative disease of the viscus.

The presence of tubercles scattered over the surface of other organs tends to prove the true malignant character of the affection of the stomach, and certainly to remove it from a class of disease which some writers, (and more especially Andral,) regard as a thickening of the submucous tissue, and as consisting rather in simple hypertrophy, than in deposit of adventitious inorganizable material.

The history of this case, the aspect of the patient, the universal spreading of disease over the organ, and the absence of ulceration, might all have led to the belief that the affection was the result of simple hypertrophy. So far, indeed, it would be difficult to imagine a more favourable instance to prove the non-malignant character. The appearances observed in other organs, however, after death, render it almost certain that the deposit was truly scirrhus, and the whole case may be regarded as opposed to the conclusion that such thickenings of the submucous cellular tissue are mostly simple hypertrophies, rather than degenerations of structure, while it points to the necessity for minute examination of the other organs in similar cases for the satisfactory determination of the question.

Dropsy—disease of heart and lungs.

—W. H., æt. 37, single, pale, sallow, and anæmic; light hair and eyes, short stature, but well proportioned. Till within the last three years lived a very irregular life, drinking great quantities of spirits, especially gin: at the same time was frequently unable to procure a sufficiency of wholesome food. His employment is that of a hatter. Resides in the Kent Road. Father died of consumption at the age of 46 years. Mother is still alive; states that he was never ill in his life, till about two months ago, when he was admitted into Guy's Hospital for rheumatism, under Dr. Babington: he remained in the hospital for five weeks, when he was discharged quite well. About a fortnight ago felt severe pain in the pit of the stomach after meals; this pain was accompanied with a sensa-

tion of distension, which generally continued for about two hours, and did not return till the stomach was again repleted. A change of diet produced no alteration in this symptom. The pain was increased on pressure. Five days ago experienced several rigors in the course of twenty-four hours; these were followed by cough and dyspnoea; had no pain in the chest. Felt at the time also a sensation of tightness extending across the abdomen.

On admission the symptoms were a constant cough, excessive dyspnoea, no pain in the chest, a tightness across the centre of the abdomen, which was somewhat swollen, not tense: percussion gave abnormal resonance; no fluctuation discoverable. The appetite good; tongue pale, but moist and clean; bowels regular; micturition natural; urine high coloured, and containing an abundant red sediment, which disappeared by heat; slightly acid; not coagulable by heat or nitric acid; density 1020.

Chest.—Left side normally resonant, the whole of the right being dull, less so at the apex, in the erect position. Bronchitic râles are universal; ægophony is heard about the centre of the chest posteriorly on the right side. Increased dulness over the pericardial region. The voice is much less strong than in health. Expectoration copious, very viscid and frothy, but not streaked with blood. Pulse small, very weak, 120 in the minute. There is considerable œdema of the feet, extending as high as the middle of the calves. Heart's action nearly inaudible, quite preventing the detection of any diseased valvular condition which may exist.

Feb. 13th.—Ordered Liquor Ammon. Acetatis, ʒss. c. Magnes. Sulphatis, ʒj. ter die. Pil. Scillæ Comp. gr. x. omni nocte. Emplast. Lyttæ thoraci applicand.

14th.—Cough rather less, expectoration less, more viscid and streaked with blood; the dyspnoea was so considerable last night that he could not lie down; it has been rather less during the day. Bowels open three times since last evening. The physical signs of the chest affection remain the same; abdomen less tympanitic; did not sleep at all last night; pulse small; very weak, 106. Urine of the same character as on admission; perspired a great

deal during the night. Countenance
sallow.

15th.—Slept well last night; was able to lie on either side or on the back at pleasure; the cough was not less frequent, but expectoration was performed more easily; sputa less viscid, and streaked with blood; œdema of the legs much less; dyspnoea considerably less. The bronchitic râles not nearly so general; coarse crepitation is heard at the apex of right lung, especially in front. Urine of the same character as before. Bowels open four times in the twenty-four hours. Pulse extremely weak, 108.

16th.—Is still improving; was ordered Pil. Doveri, gr. v.; Pil. Scillæ, Co. gr. v. omni nocte.

17th.—Not so well; more dyspnoea and cough; expectoration more scanty, of the same viscid, and streaked with blood; the feet not more œdematous; appetite bad; tongue clean and moist; slept badly; very thirsty; perspired freely last night. Bronchial sounds not increased since the 15th, but at the centre and base of the right there is some fine crepitation at the end of inspiration. The characters of the urine not altered. Pulse 116, very weak and small.

18th.—Much the same as yesterday; was ordered Vini Ferri, 3ij.; Mist. Camphora, ʒvj. ter die et P.

20th.—Says he feels stronger; the cough is not less frequent; the expectoration is more easy, still streaked with blood; sleeps badly; dyspnoea much less; tongue pale, moist, and clean; bowels regular; urine natural in quantity and colour, not coagulable by heat or nitric acid, density 1023; loud mucous râle is heard in the apex of right lung; fine crepitation at the centre and base; pulse still extremely small and weak, 108.

21st.—Less cough; expectoration easier, otherwise much the same as yesterday: less œdema of the legs.

24th.—Much worse; great dyspnoea, and cough; sibilous and loud mucous râles; expectoration very viscid and sanguineous; feet and legs much swollen. Large patches of purple discolouration appeared this morning on both feet: there are no blisters. Pulse 108, very weak and small; heart's action very tumultuous, but weak; no appetite; some thirst; restless, and unable to sleep. To be supported.

25th.—Rather less dyspnoea and cough; expectoration of the same character; countenance rather livid; restless; pulse exceedingly weak, 116; no alteration in the feet. They have undergone no alteration in temperature since admission. Was ordered support.—Mistura Ammoniac ter die. Vini Rubri, ʒvj.

26th.—Died this morning.

Post-mortem examination.—Head not opened.

Chest.—Effusion into pleuræ, especially on the right side. Adhesions at the apex of the right lung; both lungs emphysematous: the right presented sloughing pneumonia at the base posteriorly. Pericardium adherent almost universally. Heart enlarged. The walls of the ventricles about natural thickness; the cavities large. Mitral valve much diseased, forming a very imperfect septum between the auricle and ventricle, admitting of free regurgitation. Right auricle involved in the adhesions, and thickening of the pericardium. Its contractile power must apparently have been greatly interfered with.

Abdomen.—Considerable effusion into the peritoneal cavity. Liver diseased, not greatly enlarged, but largely granulated. Kidneys congested, and spleen enlarged. Intestines small, pale, and contracted.

In this case we observe a considerable mechanical obstruction to the passage of blood through the heart from valvular disease, the probable result of rheumatic diathesis; and venous congestion, produced in almost every part of the body. This congestion was indeed so marked that œdema of the cellular tissue and effusion into the pleural cavity were induced; and yet, notwithstanding all this, the kidney, though congested, did not pour out the serum of the blood with the urine, as might have been naturally expected. This fact shows a considerable power of resistance to the congestive influence on the part of the kidney, and tends to confirm the idea that no congestion of an ordinary character is sufficient to give us that albuminous condition of urine which has been considered as peculiar to the morbus Brightii.

Now cases are on record which, while they resemble the above both in respect to exhibiting some of the symp-

tons of Bright's disease, and in not showing disease of the kidney, still have shown the presence of albumen in the urine, and thus have led many members of our profession to the opinion that coagulable urine is in no way to be regarded as a test or indication of the granular degeneration. So firmly has the truth of this position been impressed on the minds of some, that they have been inclined to consider that diseases of the heart, causing obstruction to the passage of blood through that organ, are to be considered not only as capable of occasionally producing albuminous urine, but as one of its principal causes.

It would be difficult to imagine a case more calculated to produce albuminous urine by simple congestion of the kidney than that I have just detailed, and yet the symptom was altogether wanting. How are we, then, to account for those cases in which albumen has been detected in the urine as the result of obstructed circulation, and in which much less general dropsy and tendency to effusion has occurred than in the foregoing instance? It is obvious that the kidney has great power of resisting the passage of serum through its structure, or why was albumen not present in the urine of my patient? It would appear probable that some condition of kidney predisposing to albuminuria is required in order to bring about the discharge of albumen which has been occasionally observed in cases of general congestion, and without which the organ will not become so far implicated as to allow of the presence of albumen in the urine as the result of serous effusion.

ANALYSIS OF A CONCRETION FOUND IN THE AORTA.

In the case of a man who had died from arthritic metastasis and hydrops pericardii, a stony concretion was found in the aorta. According to Landerer it was composed in 100 parts of

Uric acid . . .	14
Animal matter . . .	6
Phosphate of lime . . .	62
Carbonate of lime . . .	16
Carbonate of magnesia . . .	2

100

Heider's Archiv, 1847.

THE INJURIOUS EFFECTS OF RUMEX ACETOSA.

By HENRY HANKS,
Medico-Chirurgical Pupil, Bath.

THE virulent qualities of this plant are not generally known, even to those whose art consists in mitigating human affliction. This, then, will be a plea for my bringing the following case before the readers of your journal:—

J. P., aged 6 years, a robust and healthy boy, had, so far as I could ascertain, frequently in the preceding week eaten sorrel, but more freely on the morning of June 7th. At 2 o'clock, P.M. of that day, he declined partaking of his usual meal; appeared to have sickness at the stomach, and heaviness of the head. He then went to school. When there, about 3 o'clock, he suddenly fell from his seat exhausted: he was lifted up, and taken into the air. The inferior extremities again lost their power: he fell, and vomited, when down, a diffuent raw greenish-coloured mass. He was raised, but could only feebly support himself. He was taken to his residence, and placed on a couch in the recumbent position; was perfectly conscious, and stated his distress to be in the head, and about an inch and a half beneath the lower extremity of the sternum: there was an unremitting short cough, unattended with expectoration. My informant then left him for a while, and, on returning, she found him on his back, in a paroxysm of general convulsions, with his arms elevated, reciprocally casting them forwards and bringing them backwards, doing the same with his legs, opening and reclosing his fists, and alternately throwing his head from right to left. His eyeballs were glassy, fixed, and prominent; there were rattling and grinding of the teeth, without any foaming at the mouth, and he was absolutely senseless. In this fit he continued for a quarter of an hour. Shortly before its cessation, his grandmother bathed his countenance with a mixture of rue and water, which seemed to rouse him, and he recovered his senses. His linen was saturated with cutaneous exudation. Among other symptoms, there was a perpetual groan-

ing, with inordinate thirst, heat, and rigors, and deficient urinary and alvine evacuations. On the following day (8th) the moaning discontinued, and, excluding the perspiration, circumstances progressed without any deviation to the evening of the 9th, when he had a motion; but, as he had in the interval taken aperients, its condition was not noticed.

On the 11th, his reclining position was changed; cough of the same nature; the soreness of the epigastrium and fulness of the abdomen remain; the pulse is feeble; the tongue moist and furred. I felt assured that the stomach contained some irritant, from the character of the cough from the outbreak, the fixed and constrained position, the defined boundary of the pain, and tense feel of the bowels; but I could obtain no satisfactory information on this point.

On the 13th I again visited the patient, and then, for the first time, ascertained that the child had eaten sorrel. On inspection of the pharynx, its lining membrane was found congested as far down as it was visible, the anterior part moistened by the accumulation of a limpid secretion thereabouts, and the uvula greatly lengthened. He mentioned, when asked, that there was a constant pain, tracing its course with his fingers, from the throat, throughout the œsophagus, to its junction with the cardiac orifice of the stomach; but from one so young, the exact feeling could not be sought. During swallowing, the pain was increased. He lies in the same situation; he drinks greedily; the surface of the abdomen is not stretched, and, when compressed, he almost instinctively hardens it; extremities warm, skin hot, and free from perspiration; rigors, followed by heat; there is a short hacking cough at intervals, without sputa; urine decreased in amount, and has the appearance of phosphatic; no pain or other symptom in the chest; pulse small and weak; tongue white, furred, and rather swollen; the lower eyelids puffed, and movements of the pupil impeded. On the 10th, forenoon, after eating an egg, he ejected it, through which was interspersed a few minute or divided green stalks, one piece equalling in circumference a large pin, and sixteen lines in length, which, I regret, was

not obtainable. Afterwards he groaned from agony, and was on his back, with his head diverted to the right, seemingly helpless, and sleep was interrupted. He could assume any position on the 16th. The abdominal muscles were flaccid, and not of unusual temperature; epigastrium painless; no subsequent vomiting. The œsophageal and pharyngeal feelings, and appearances of the latter, are unaltered; the cough persists, as does the thirst, which is incessant; sleep good and noiseless; the stool is healthy, and the urine in which it is suspended, turbid and whey-like; tongue and pulse as last reported; altogether the febrile action is less.

18th.—A tickling is still perceptible in the fauces, produced by the lax uvula, to which might also be referred the cough, which attacks him at distant periods. Eagerness for fluids, once almost insatiable, is no longer present. Debility is now the most important symptom, from which he is rapidly recovering, to accelerate which I ordered quinine, diluted sulphuric acid, and infusion of roses, so that it may have the effect when swallowed, of constringing the throat. He was, on the 21st, enjoying himself with those of his own age.

CASE II.—It may not be unsuitable to append a summary of what befel an uncle of this child. Twenty-nine years have elapsed since he went to the fields with a similar intention. He came home, and quickly violent and universal pain ensued in the bowels, so intense that he pressed them firmly and rolled about, vociferated loudly, with a pallid and haggard countenance, and, as it were, thrust out his eyes. A practitioner, now dead, was applied to, who exhibited an emetic, causing the instantaneous expulsion of a large quantity of masticated sorrel; the lateral motion ended in a quarter of an hour; vomiting took place thrice after, but was free from the green material; his thirst was great, and appetite failed. On the morrow he was comparatively well, except the consequent weakness.

Some may be disposed to doubt whether the symptoms in these cases were referable to sorrel or to some other vegetable poison. I trust what I am about to submit to them will remove this doubt, although it is sup-

ported by what Dr. Clarke mentions—"That the natives of Wermeland, on the confines of Sweden, make sorrel into bread in seasons of scarcity, and that it is not unsalutary."* To this observation, the testimony of the children, and the fact that it has been recently in this city discovered in the stomach of a child, who, without any ambiguity, met with his death as inferred (its lining coat was beautifully injected and diffusely tinged, an account of which will be published at some future period), and that in it is a salt whose deadly properties are universally acknowledged, are adverse. We are, it appears to me, warranted in regarding the statements of these patients, that they had eaten sorrel, as correct, from the analogy, at once palpable, on comparison, which existed in the symptoms, nature, and seat of the disturbance, to those which are enumerated to have occurred, when the poisonous salt contained in this plant (binoxalate of potash) has been taken separately. It is rational to suppose, that, had a sufficient quantity of these leaves been eaten, so that, collectively, they contained no less binoxalate of potash than would destroy life, the cases might have proved fatal. Had an examination been instituted on the 10th, the mucous surfaces of the stomach, œsophagus, and pharynx, and their continuous textures, would, from their extreme vascularity, have corresponded to the appearances that would arise from a minute quantity of oxalic acid, or a larger amount, but proportionate strength, of binoxalate of potash, being injected into the stomach; its contents being subsequently evacuated, the patient dying, the fluid which remains, or a portion of the organ itself, is subjected to an analysis, in which oxalic acid may be detected, either free, or in some form of combination. This would be ascribed to a suspicious origin, and an innocent person accused; then a conclusion might unquestionably be formed, that the deceased, beyond a doubt, had come by his or her death as already mentioned. The following may be taken as a summary of the symptoms.

Nausea and headache.—These ap-

peared at the commencement of the case, and would have been of themselves of uncertain diagnosis: they were retarded by his having taken aliment shortly before, which had first to undergo the solvent action of the gastric fluid; however they foreboded what was to supervene, and plainly shewed some irritant to be in the cavity; although the headache pointed more expressly to narcotics as a cause.

Debility and vomiting.—When the gastric fluid had accomplished the solution of the food, the poison in it was absorbed into the system, and accounted for these symptoms.

Convulsions.—The gastric irritation had a special sympathetic effect on the nervous centres, evinced by the reflex involuntary muscular movements: nothing of the kind was noticed in Case II. the adult, whose maturer age better sustained the excitability of the system. Even in young children, the sudden access of febrile excitement will be productive of similar results. Convulsive actions belong more to the narcotic class of poisons than the irritant: to this these could not possibly be referable, as there was no relapse into lethargy, or other indication of functional lesion of the brain.

The *cough*, too, had in part a sympathetic, and partly local derivation; first, from the irritation of the pneumogastric nerve, which, until this ceased, was harassing—ultimately and locally, from the relaxed uvula.

The fauces were red and sore; the œsophagus painful, and aggravated during swallowing. The changes in these parts were, as might be expected, but slightly manifested, in their abnormal colour, and exudation of mucus from the mucous membrane, induced by the long-continued passage of an acrimonious irritant over its surface; and, of course, from its sensitiveness, and perhaps lessened calibre, increased by the pressure of nutriment. The epigastrium was tender. The difficulty which the gastric secretion experienced in the reduction of the sorrel stems to such a state, that they may be allowed an exit through the pylorus, explains the prolonged duration of this feeling.

Henceforth a notable improvement took place; the irritability of the stomach and pain abated; the cough was

* Quoted in the London Dispensatory, 6th edition, p. 564.

less constant; and he was heedless as to his mode of lying: this, connected with the preceding facts, convincingly prove the accuracy of what was supposed.

It is worthy of remark, that so far the similarity of the symptoms, but of varying severity, between these two poisons, does not admit of any doubt; in both distressing thirst, extreme diaphoresis coming after the convulsions, the nature of the matters vomited, and those of which I have treated singly, are prominently set forth.

There remains one peculiarity on which I must briefly dwell, as it relates to the want of agreement in the action of the bowels: it will be observed that constipation existed, the reverse being present in poisoning by oxalic acid. Can this be elucidated?—administer an equivalent proportion of oxalic acid, would there not be obstinacy of the bowels, as in gastric, peritoneal, or enteritic inflammation?—add largely to it, would there not be diarrhoea in virtue of the altered structure of the intestines, as in ulceration or corrosion?

Four leeches were ordered to a part of the body, the skin to which they were to be applied was cleansed; afterwards they were retained, one at a time, by means of a wine-glass,—they would not adhere; after being kept in contact with the surface of the body ten minutes, they all successively died. On the ensuing day, another supply was recommended; these could not be made to perform suction, and they lived. I state this, from just having read “In two cases leeches have been killed by the blood drawn by them from persons who were at the time labouring under the effects of this poison (oxalic acid);”^{*} and again, Dr. Beck quotes “that leeches applied to the stomach were poisoned and died; this was six hours after the poison had been taken, and although healthy, and fastening immediately, yet they did not seem to fill, and on touching one, it felt hard, and immediately fell off, motionless and dead; * * * they had drawn scarcely any blood.”

If I have been unusually prolix, the novelty of the subject will excuse me; if I have proved inadequate to my undertaking, my youth, and the short time

I have been connected with the profession, will be on my side.

40, St. James' Square, Bath,
June 1847.

* * We willingly give insertion to this interesting communication, as it relates to the poisonous action of a plant which has not received any notice from toxicologists, although it is so abundant in this country, and is often eaten in large quantity by young children. Dr. Christison does not mention it among vegetable poisons, and Orfila does not include it in his list of vegetable poisons, although the narcissus and ranunculus are enumerated. This omission is the more remarkable, as it is well known to contain a salt which all agree in describing as an active poison. Orfila regards the possible presence of sorrel (as a culinary article) in the stomach as a strong objection to the process commonly employed for separating oxalic acid; but as he admits that the plant contains only 1-500th part of its weight of binoxalate of potash, it is not easy to perceive how any human being, with an ordinary stomach, could swallow enough *sorrel soup* to create any practical fallacy.

The profession is indebted to Mr. Hanks for calling their attention to the subject of poisoning by sorrel. We have omitted some parts of his letter, as they appeared to be unnecessary to the history of the case, and it is always desirable in reports of this kind to have the facts in as concise a form as possible.

APPEARANCES IN THE LUNGS OF A STILL-BORN FŒTUS.

DR. HERMANN describes appearances which he found in the lungs of a fœtus, still-born at the 7th month, resembling what have been described by some writers as the results of inflammation—an opinion in which Dr. Hermann coincides. The substance of both lungs was solid, and of a reddish brown colour. On their surface as well as in their substance were numerous small patches, varying from the size of a lentil to that of a bean, of an irregularly round form, and a dirty greyish tint, exceedingly firm and dense, presenting an indistinctly granular structure when divided, and infiltrated with a grey adhesive matter. [Similar appearances are enumerated at p. 166 of Graetzer's work on “Diseases of the Fœtus,” who is disposed to regard them as the consequences of inflammation.]—*Dr. West's Report on Midwifery*, 1845-6.

^{*} Taylor's Medical Jurisprudence, 2d edition, p. 103.

MEDICAL GAZETTE.

FRIDAY, JULY 9, 1847.

THERE are a few facts connected with the report on the Bona Vista fever which still require notice. Among these may be mentioned the reappearance of the disease at Moradinha, on the 30th May, 1846. Dr. M'William gives us the following description of the symptoms, as they appeared in a girl, 14 years of age, and in a man, about 35:—

"The countenance of the girl, a dark mulatto, was of a dirty lemon colour, shining through the natural darkness of the skin, made it resemble very much that of a light bronzed statue. A very strong fœtor issued from the body, which tainted the room and drove us back from the door until the window was opened. She had complained much of pain along the spine, and still pointed to her head as the seat of pain. She had been bled in the arm by one of the neighbours, and all around the wound was of a greenish colour, swollen, and putrid. In the angles of the mouth there was dark frothy blood. She had had black vomiting; but this symptom had for some hours ceased. The urine was black,* as were also the fœces. The former had been voided in very small quantities. Pulse small, irregular. She had been ill seven or eight days.

"The man had nearly the same symptoms, but in a milder degree, and he had not been affected with black vomit.

"Being persuaded that the disease had, during the epidemic, manifested highly infectious qualities, we at once requested Senhor Librao, Administrador do Concelho, to have the sick put into as large a house as the village afforded; to cause a temperature of 140° Fahrenheit to be introduced into all the houses; to have the clothes of two persons who had already died

burnt, and to have the village surrounded by soldiery; sending all supplies under proper precaution, and preventing ingress or egress to all except the medical attendants. On our visit to the village early the following morning, the girl was just expiring; but the man was not worse, and was reported to have rallied somewhat during the night. The nausea had in a great measure subsided under the use of small and repeated doses of quinine. The urine gradually became lighter, and increased in quantity; the headache was relieved: he took some nourishment, and was convalescent in five or six days."

The mode in which the disease was brought into this district, was clearly traced:—

"A girl called Maria dos Prazeres was the first person attacked at Moradinha on this occasion. She had visited Joao Gallego and the other eastern villages on the 15th of May, and returned to Moradinha, where she was laid up with fever on the 20th of the same month. Her mother, who slept with her one night after she was taken ill, was also attacked on the 26th, and died on the 29th, after three days' illness. The girl whom we saw was called Perpetua. She had visited Maria, soon after which she was seized with fever, and died with the symptoms which have been already described, on the morning of the 1st of June."

The strong resemblance which the disease prevalent in the island bore to that which spread among the crew of the Eclair, justifies the inference that they were identical.

"Dr. Almeida, who was present during the early period of the epidemic, and Messrs. Moraes and Leao, surgeons in the Portuguese navy, who arrived in February, informed me that in the majority of the cases *there were yellowness of skin, suppression of urine, and black vomit*. The two former symptoms existed in the cases I saw at Joao Gallego in April, but there was no black vomit. *Suppression of urine was so common a symptom, that it has been mentioned to me by all classes with whom I spoke on the subject of*

* Circumstances prevented a chemical examination of the urine; but it seemed to owe its colour to the same cause as the matter vomited in black vomit, namely, disorganised blood.

the fever. It is worthy of remark that, according to Louis, this was an extremely rare symptom in the epidemic at Gibraltar in 1828. *It seems then hardly to admit of a doubt* that the disease with which the crew of the Eclair were afflicted, that which proved fatal to the European soldiers at the Fort, and that which soon afterwards prevailed on the island of Bona Vista, were identical."

As additional proofs of the importation of this disease, and of its propagation by contagion, we quote the following from Dr. M'William's summary:—

"After most minute and repeated investigations at Porto Sal Rey, at Rabil, Estacia, as well as the eastern villages, I have failed to discover that there was disease of any kind on the island until after the arrival of the Eclair. If to testimony such as this be added the fact that Moradinha, which is situated in the Rabil Ravine, and Estacia de Baixo, which overlooks it (both of which places have always come in for a great share of remittent fever at any time that disease was prevalent), were in a most unaccountable degree exempt from fever during the late epidemic, then I think that the source of the disease is not to be found on the island, and therefore is to be looked for among the sick crew of the Eclair.

"The previous healthy state of Bona Vista will, I think, not now be questioned, nor will the occurrence of the disease in the two European soldiers at the Fort soon after the departure of the Eclair's people. If, then, the absence of all local cause on the small island, and the identity of the diseases that proved fatal to them and to the sailors be admitted, the inevitable conclusion is, that the fever was propagated to the soldiers either directly by contagion from the bodies of the sailors, or by an infectious matter left in the room which had been occupied by the sick crew. The same reasoning applies to the island of Bona Vista, to which it seems beyond any doubt that the fever was conveyed by the negro soldiers, and by them transmitted to Anna Gallinha and their other visitors at Pao de Varella."

At the time that the reporter was engaged in collecting these observations, Dr. Bowring was contending for the abolition of the quarantine laws, on the ground that there was not "the slightest evidence" that this disease (African fever) was communicated from one person to another. In support of this argument, he quoted the authority of Dr. M'William! As the subject will again come on for discussion in the Houses of Legislature, we may put in juxtaposition with this bold assertion, another quotation from the Report. This is the more necessary, because the facts stated by the reporter tend to shew that cutting off all intercourse with the sick had a remarkable influence in preventing the diffusion of the disease in the island. We have seldom met with a case in which the prudence and utility of maintaining quarantine restrictions, were so clearly demonstrated.

"In fact it may be said that in each town and village on the island the disease first appeared in a single house, which became an irradiating focus for its dispersion in all quarters. The exemption in persons who removed in time from infected places was clearly shewn in many instances. Dr. Almeida, by changing the residence of his family from place to place, succeeded in keeping the whole of them intact. The same gentleman for some time prevented the introduction of the disease into Fundo das Figueiras, by the establishment of a sanitary cordon, and afterwards retarded its progress by the imperfect means of segregation of the sick which he had in his power. Boaventura was for some weeks without a case of fever, although the disease was raging at Cabecada, a few hundred yards only from it, by the adoption of measures to prevent intercourse. When making the circuit of the island in May, I fell in with many families who had fled from the several villages at the outbreak of the fever. At a place called Espinguera, near Mount Broyal, on the north side of the island, there were three families, amounting to twenty-four persons, who had left Joao

Gallego early in November, and they had all escaped. At Cantor, on the north-east base of Mount Ochello, there were fifteen people from Cabeça dos Tharafes and Joao Gallego, who had left these places when the fever appeared. The original number that had taken refuge here was twenty-three or twenty-four, but eight persons had imprudently returned to the villages in January; of these all had fever, and four died. At a small hamlet only one mile and a half to the eastward of Cabeça dos Tharafes, there were twelve persons from that village who had been completely exempt during the whole of the epidemic, merely by never leaving their place of refuge, and allowing no one from the villages to come near them. Other instances of complete immunity from seclusion are on record in the evidence appended to this Report.

"From the above statements it is evident that the fever at Bona Vista possessed the properties which are usually attributed to a contagious disorder; and, connecting this fact with the time and circumstances of the seizure of the soldiers at the Fort by fever, and of the appearance of the disease in Porto Sal Rey, will, I think, leave no doubt of its introduction into the island by the Eclair."

The supposition entertained by Sir W. Burnett, that the fever had an indigenous origin, and depended on a vitiation of the air, is thus swept away:—

"It is thus evident that all of these islands are within a few hours' sail of each other with the north-eastern trade, which blows in this quarter with little variation throughout the year. Now, had the disease depended upon general vitiation of the atmosphere over the Cape de Verdes, why did Sal, San Nicolao, San Antonio, and the other islands escape, while the pestilence was spreading far and wide upon the devoted Bona Vista? The supposition (if there be such) that there was an unwholesome condition of the air over the islands and corresponding portion of the African coast, cannot be reasonably entertained; for it is not in the usual order of nature that a cause so diffused would produce an effect so merely local. An attempt has been

made in a former part of this Report, to shew that the origin of the fever on the island of Bona Vista, was not attributable to an indigenous cause, but that it was the result of the visit of the Eclair."

The main conclusions at which Dr. M'William arrived, are the following:—

"1. That the fever on board the Eclair was primarily the remittent of the African coast, which is not a contagious disorder, but that the disease acquired contagious qualities in virtue of a series of causes.

"2. That although there exists on the island of Bona Vista a physical cause capable of producing remittent fever, yet it does not appear that that cause was in action when fever broke out in September 1845, and that the island was quite healthy when the Eclair arrived there.

"3. That the disease of which the Portuguese soldiers died at the Fort (Duke of Braganza) on the small island, was that which afterwards ravaged Bona Vista, and the same as that which prevailed among the crew of the Eclair.

"4. That the fever was propagated throughout the island almost exclusively by direct intercourse with the sick, there being only two cases in which there appears any probability of persons having been infected in any other way."

"5. That although those who had passed through the fever were much less liable to the disease than those who had not, yet it would appear that a person having had one attack, possesses no absolute protection against a second attack.

"6. That connecting the whole of the circumstances attending the arrival and stay of the Eclair at Bona Vista with those under which the disease appeared on the small island, and afterwards on Bona Vista itself, leaves no doubt of its having been introduced by the Eclair.

"7. That in all probability the mortality from fever on the island was much increased by the want of proper nourishment for the people, as well as

* In one of these, the fever was supposed to have been conveyed by a blanket which the man had in his possession.

by the total absence of medical assistance for some months."*

The important questions which Dr. M'William had to solve for the information of Government, are therefore conclusively settled in the affirmative. The first conclusion is, we consider, open to exception; and so far as it bears on the main subject of inquiry, quite superfluous. That medical writers should agree about the essence of a particular disease, is not to be expected. Whether the fever in the Eclair was from the very first a contagious disorder as Sir William Pym believes, or whether it only acquired a power of propagating itself by contagion when the ship arrived at Bona Vista, as Dr. M'William thinks, is really immaterial to the issue; because the Doctor has already proved most satisfactorily that, but for the arrival of the ship, the island would have been spared this terrible calamity, and this is all that the advocates of contagion and quarantine need regard. If Dr. M'William's first conclusion be sound, it makes the case even more fearful than we could possibly have anticipated; because it is admitted thereby, that a comparatively mild and tractable disorder may, by a vessel touching at an island, become converted into a formidable and destructive plague, against which nothing but the strictest seclusion can protect the inhabitants! This hypothesis of "acquired or contingent contagion," where the "circumstances," although stated to be "peculiar," can neither be defined nor foretold, would, if well-founded, have

* "The treatment adopted by the Portuguese surgeons, including Dr. Almeida, the resident medical man on the island, was of the most simple kind. They rarely bled generally, sometimes cupped and blistered, administered diaphoretics and anti-spasmodics, and relied chiefly upon quinine, and mild purges and enemata. Mercury was not exhibited in any form. As experience has, alas! too generally taught on other occasions, the bad cases were little, if at all, amenable to treatment of any kind; but great dependence was placed upon quinine in checking vomiting, whether bilious or black."

a most dangerous influence on the intercourse of nations. Governments must look to practical results. The Governor of Goree refused all intercourse with the Eclair, and the island escaped;—the Governor of Bona Vista following medical theories which were placed before him in a plausible form, allowed such an unguarded intercourse, as to lead to a sweeping mortality, and to his own island being placed for a long period under strict quarantine! If, therefore, Dr. M'William's views are to be made the basis of future precautions in the Cape de Verd and other islands, the authorities are bound to place, in the strictest quarantine, every vessel that happens to have on board a case of the remittent fever of the African coast, which is commonly admitted not to be a contagious disorder! There is obviously no alternative when the "series of causes" which render a mild disease intensely contagious, cannot be defined or described. The facts, however, do not appear to us to bear out Dr. M'William's theory, i. e. that contact with Bona Vista first rendered this disease contagious: especially as it is admitted that the island was at the time in a very healthy state. So far as we can perceive, the reporter had before him no proofs to justify this view. At the most, he could only judge from a perusal of the documents furnished by the officers of the vessel and hearsay evidence. Therefore, in this respect, he can claim no advantage in forming his opinion over others who are at a distance. Indeed the mode in which he expresses himself in one part of the Report, conveys the impression that he was without the means of coming to a correct decision. "There is no proof that the fever in question was in any degree contagious before the vessel reached Bona Vista."* By using these

terms, the question is obviously left open: they certainly do not bear out the conclusion at which the reporter has arrived; because this could be justified only by his having discovered *clear proofs* that the disease, as it existed in the *Eclair* before reaching the island, was certainly *not contagious*. On this point we cannot agree with Dr. McWilliam. If our readers will turn to our report on the state of this vessel in 1845, we think they will concur with us, in the opinion, that the disease, if not contagious from the first, speedily became so; and that the landing of the crew on an island, admitted to be healthy, was, *pro tanto*, likely rather to mitigate than to aggravate its malignancy. On the assumed convertibility of endemic into malignant, remittent, or yellow fever, we shall express no opinion. Countries may be decimated while medical men are settling the types of diseases, or determining in what latitude or at what degree of the thermometer, they may acquire special malignancy. Discussions on subjects of this kind merely touch the fringe of the question: the great fact for a government to consider is,—under what circumstances and to what extent it may be advisable to allow of intercourse with countries where disorders are prevailing, which are either avowedly contagious or likely to become so by a series of peculiar but unknown circumstances!

Although we have taken leave to differ on this question from the learned author of this valuable Report, we must do him the justice to say that the mode in which he has performed the highly responsible duties entrusted to him by Government, reflect upon him the greatest credit. There can be no doubt that before his departure from this country, his views, consistently with the experience that he had then acquired, were rather adverse to, than

in favour of contagion. He has had the honesty and candour—somewhat rare qualities with those who take up medical theories—to state the truth boldly, even although it might conflict with former opinions, and would effectually prevent him from being hereafter quoted as an authority by the anti-quarantine members of a House of Commons! Nevertheless, he will have the conviction that he has performed his duty conscientiously, and that he has been able to contribute valuable evidence on a subject in which the well-being of nations is eminently concerned. It will be a great satisfaction to us to know that Sir W. Burnett, the Director-General of the Medical Department of the Navy, has recommended this worthy member of our profession for that promotion which he so well deserved. His services in the Niger are not likely to be soon forgotten, and alone deserve a better reward than has yet been meted out to him. Although the Report, which we have here examined, does not accord in all respects with the well-known opinions of the Director-General, we cannot believe that this will be any obstacle to the recommendation of the author for promotion.

THE daily journals inform us that a young man, by name Henry Johnson, has been charged at one of the Police Offices with having forged a document purporting to be a certificate of the Court of Examiners of the Apothecaries' Society.

The accused, it appears, had presented himself for examination, and had been rejected. He then went off to an engraver's with a *bonâ fide* certificate, desiring him to engrave a plate exactly similar, leaving a blank for the name in the centre. The

engraver communicated the facts to the Society. The plate was then finished and paid for,—the sum charged for it being £9. 10s.,—but the accused was immediately taken into custody, with the plate and the original certificate in his possession. The name of the person who had lent the certificate, apparently for the perpetration of this shameful fraud, did not transpire: but we trust that, should it not be satisfactorily proved by the lender that he was not aware of the fraudulent purpose for which it was borrowed, it will be withdrawn by the Society, and his name erased from the list of licentiates. The accused has been fully committed for trial.

Irrespective of the criminality of this novel attempt to forge a certificate, we are at a loss to account for the motive by which the author of it could have been actuated. Let us imagine that he had succeeded in filling up the certificate with the forged signatures of the Court of Examiners, he could only expect to impose on the public by the display of the document; and for this purpose any purchaseable diploma, from a sham Institution or University, would have answered, without exposing the possessor to the risk of a prosecution for forgery. These documents, it is well known, are always in the market for unconscientious persons; and the public would be as easily deceived by them as by a forged Apothecaries' certificate. That he could ever have made use of the forgery for the purpose of deceiving members of the profession, or any public body, in order to obtain an official appointment, is not probable. A reference to the Apothecaries' Society with the date of the false document would have at once led to detection; and from the many impositions practised, these matters are now more closely scrutinised than they were a

few years since. The conduct of the accused is therefore inexplicable. We forbear making any further remarks upon the case in its present stage; but it is impossible to avoid drawing the conclusion, that a Registration Bill is imperatively needed, not merely for the separation of quacks from the profession, but in order to put an effectual bar to the possible success of such a nefarious attempt at imposition as this. In the meantime, although the plan might entail a little expense, we think it would be advisable for the Apothecaries' Society to print yearly, in a cheap form, a list of all those to whom they have granted certificates, with the dates at which they were granted. Such a list would, it is true, include the names of many who are dead, or who have retired from practice, but it would still be a powerful check upon the perpetration of fraud.

FERRI CYANURETUM IN THE TREATMENT OF ASCARIDES OF THE RECTUM.

A CORRESPONDENT to the American Journal of Medical Sciences, who does not give his name, as he is not now engaged in the practice of medicine, invites the attention of the medical profession "to the use of the Ferri Cyanuretum, or Prussian Blue of commerce, in the treatment of Ascarides in the Rectum."

"From present observations," he writes, "I am disposed to believe that upon a fair trial it will be found more effective in the treatment of the *inveterate* cases of the disease, than all other remedies.

"Commence with five grains of the prussiate rubbed up in two ounces of rain water or mucilage of gum arabic, (the pure water is preferable, except in cases where much irritation of the mucous membrane exists); throw this into the rectum, and retain it until the next regular defecation. Repeat this daily, gradually increasing the quantity of the prussiate until perfect and permanent relief is afforded. I believe the greatest relief will be experienced after using it even once or twice."

Reviews.

The Learned Societies and Printing Clubs of the United Kingdom, &c. Compiled from official documents. By the Rev. A. HUME, LL.D. F.S.A. &c. 8vo. pp. 307. London: Longmans. 1847.

THIS is a most useful volume. In looking at its contents, we cannot help feeling that such a work has been long wanted. The object of the author has been to give a concise account of the origin, history, objects, and constitution of the numerous learned societies of the United Kingdom. There are few who have attained any status in the medical profession who do not aim at attaching to their names, three or more capital letters to indicate that they have been admitted associates of some learned body: but we are much mistaken if there are not many who are entirely ignorant of the history and constitution of the Societies of which they are members. To all such, and to those who take an interest in the progress of scientific unions, Mr. Hume's work will be most welcome. The plan adopted by the author is that of giving a general summary of the objects of the Society, the rules for the admission of members, the days of meeting, and the present number of members, with the respective officers, brought down to the end of May. From our examination of the volume, it appears to us that the author has executed his task exceedingly well. We have noticed one or two omissions, such as were likely to occur in a first attempt at such an extensive subject, but they are not of an important kind. We doubt not that the work will become popular, and that it will receive the support of members of the medical profession, who decidedly preponderate in the lists of these scientific associations.

The Preservation of Infants in Delivery: being an Exposition of the chief Cause of Mortality in Still-born Children. By RICHARD KING, M.D. M.R.C.S. &c. 8vo. pp. 61. London: Churchill. 1847.

THE most experienced accoucheurs have hitherto considered that compres-

sion of the umbilical cord during delivery, and before the establishment of respiration, was not only a sufficient but a very frequent cause of death in still-born children. Some have improperly applied the term asphyxia to this state, but as the function of the lungs is assumed not to have become established, the use of this term is obviously improper. Death could only be referred to interrupted circulation between the mother and child. Dr. King combats this long-established notion; and the object of the essay before us is to show, so far as we understand his reasoning, that compression of the cord is not only not a cause of death in the cases supposed, but that it is actually beneficial to the child, and tends to prevent what he regards as the main cause of death—i. e. syncope, by loss of blood from the detached placenta.

This theory, which, if true, would completely subvert the usual practice, involves the assumption that the placenta cannot possibly remain attached to the uterus after the organ has so far contracted as to have expelled the head of the infant, or its equivalent in bulk, the feet. According to the author, "just before the after-birth is thrown off, it is at its maximum of contraction, and therefore preventing the escape of blood from the infant, and immediately afterwards at its maximum of expansion, or favouring the escape of blood from the infant" (p. 40). Upon this theory, he considers also that the delivery of the after-birth before the infant must facilitate the delivery of the latter.

Into the obstetric part of the question we are not disposed to enter, but we must confess that we are by no means satisfied with the facts or reasoning adduced in support of this new view of the cause of death and of the mode of treating infants during delivery. If it be true, as most accoucheurs believe, that the placenta is not detached from the uterus so early as Dr. King supposes, then it follows that the plan of treatment which he suggests would only add to the number of still-births. In this innovation on theory and practice the onus of proof unquestionably lies with him: and here, it appears to us, his treatise is deficient. We do not say that practitioners are to be dis-

couraged from adopting and enforcing new views, because they happen to be opposed to old notions; but when they have a vital bearing on practice, and we find them conflicting with the experience of such men as Dr. Merriman, Dr. Lee, and Dr. Ashwell, we must insist upon something like clear and demonstrable proof, that these authorities have been labouring all their lives under a gross mistake, and advising a mode of practice, which, instead of tending to save life, was only likely to destroy it.

On Dyspepsia, &c. By J. B. STEWARD, M.D. 8vo. pp. 106. London: Churchill. 1847.

IN this little essay, Dr. Steward endeavours to show that the proximate cause of dyspepsia is a vitiated state of the blood and of the secretions eliminated from it. His definition of the malady is far better than many which have been proposed. He considers dyspepsia to imply "a want of power in the stomach and dependent organs to concoct or convert the food received in such a manner as shall fit it for assimilation." The author it appears has been a great martyr to the disease himself, and has been able to study its Protean characters in his own person. The treatise before us has therefore the recommendation of being based upon personal experience; and we are informed by the preface that it owes its appearance to the success which has attended his plan of treatment not merely in his own case, but in dispensary and private practice.

The remedies which he proposes are divided into mental, reguminal, and medical. The mental treatment consists in withdrawing the individual from his morbid thoughts, and in avoiding the use of medicine calculated to remind the patient that he is the object of treatment. The reguminal treatment is comprised in a few pithy rules:—

"1. Never drink when not thirsty. 2. Never eat when not hungry. 3. Never attempt to create a false appetite by tempting, that is, savoury dishes. Water is the best beverage, because if we never drink more than we want, but all cannot take it. When it offends the stomach, fresh beer may be substituted, but it must be what is called mild" (p. 59).

In the medical treatment we should interfere as little as possible by reme-

dies in the habits or pursuits of our patient. The disease cannot be taken by storm: that which is gradual in its progress requires that the measures adopted for its removal should also be gradual. Mild purgatives only should be resorted to. The author places great confidence in calomel, and thinks that (when not contraindicated by idiosyncrasy or other causes) without it there can be but little hope of permanent relief to the really dyspeptic. One of the most distressing and constant symptoms of dyspepsia is acidity, which is a result of mal-concoction; for the relief of this either the carbonate of magnesia or soda may be employed,—the former at the commencement, the latter in the progress of the treatment. No more of either carbonate should be administered, than is just necessary for the neutralization of the acid. The fashionable remedy for this distressing symptom is now bicarbonate of lime in the form of Carrara water; this, however, is not only inferior to the carbonate of soda in neutralizing powers, but it tends to overload the stomach and intestines with carbonic acid. The most effectual remedy for pyrosis is, according to the author's experience, nitrate of silver. For an account of the prophylactic treatment, we must refer the reader to the work itself. Although not specially addressed to the profession, this essay will give to practitioners many useful hints respecting the management of themselves and their patients.

On the Duties of Physicians resulting from their Profession. By the late Rev. THOMAS GIBBORNE, M.A. Pamphlet. 12mo. pp. 56.

Anecdota Sydenhamiana — Medical Notes and Observations. By THOMAS SYDENHAM, M.D. 2d Edition. Pamphlet. 12mo. pp. 80. Parker, Oxford. 1847.

THESE two little pamphlets relating to the ethics of the profession have been brought out under the editorship of Dr. Greenhill. They form parts of the series of the life of Dr. Cheyne which has been already noticed in this journal. The publication of these essays is highly creditable to the editor. We can confidently recommend them to the careful perusal of the junior members of the profession.

Proceedings of Societies.

MICROSCOPICAL SOCIETY,

March 17th, 1847.

J. S. BOWERBANK, Esq., President, in the Chair.

A PAPER by Mr. Dean "On the Growth of Fungus in the Stomata of Cactus Niger" was read.

The author commenced by stating the difficulty which existed in ascertaining whether the stomata of plants were pores, either actually opening to the outward air, or covered with a delicate membrane, or organs possessing no opening at all. He then stated that a circumstance he had observed in a plant of *Cactus niger*, which was growing in a Ward's case, and which died in the course of the winter, might possibly throw some light on the subject. Upon examining this plant, a portion of the surface near the top was found to be covered with small black patches, which, on applying the microscope, presented the appearance of being formed of tufts of pear-shaped epanales, attached end to end. Upon more minute investigation, it was found that these tufts had their attachment in the stomata, and from them proceeded a net-work of filaments, spreading in every direction into the body of the plant, and breaking up its whole structure; these filaments vary in size, from the $\frac{1}{1000}$ to the $\frac{1}{100}$ of an inch. When they pass through the stomata, their character alters, as they then bear fruit, either single, on short peduncles, or attached end to end, frequently to the number of six or eight. Another plant, a *stapelia*, growing in the same case, had a few weeks before been almost suddenly destroyed by an unknown cause, which appeared to proceed from the roots upwards, but which, at the time, Mr. Dean did not investigate, although he has no doubt but that it was the presence of a similar parasite, as he feels convinced that the sporules of the fungus enter by the roots, and gradually, but rapidly, extend themselves upwards, and when the plant is totally destroyed, then they protrude themselves through the stomata, as offering less resistance to their progress than any other part of the tough epidermis, and thus proving, in his opinion, that the stomata, if not open, are at most covered with a membrane much thinner than any other portion of the surface, and thus readily allowing these minute fungi to find their way from the interior to the exterior.

Another paper by the same gentleman was also read "On the source whence the silicious cases of Infusorial Animalcules in Ichaboe Guano are derived." After premising that aquatic birds, in addition to fish, feed

largely on marine plants, he proceeded to state that on a plant of that kind from Japan, used very extensively in China as an ingredient in soups, but whose name he had been unable to ascertain, he had found imbedded in great abundance, round discs precisely similar to those found in the guano. He had also found them on another marine plant from the Mauritius, (*Thamnopheus Telfaria*.) From this he infers that these or similar plants, inhabited by the infusoria, are eaten by the birds; and as the shells, from their siliceous nature, are not acted upon by the process of digestion, they remain unchanged in the excrements of which the guano is almost wholly composed.

April 21, 1847.

A paper "On the Structure and Formation of the Nails of the Fingers and Toes," by G. Rainey, Esq. was read.

The author commenced by stating that although the nail is correctly classed among the appendages of the skin, yet the matrix of this organ may be expected to exhibit an essential organization, different from that of the cutis, where it is converted into the ordinary cuticle. He then stated that the object of this paper was to shew by microscopic preparations, that these inferences are correct, and that the nail consists of at least two distinct structures; one proper to it—the horny structure, and the other the same as the cuticle; and also that the matrix of the nail possesses a set of vessels expressly for the purpose of secreting the horny matter. He then proceeded to describe the microscopic appearances of the nail, with references to these structures, and exhibited sections of the same. The matrix he described as consisting, in that part which corresponds with the lunula or semicircular whitish portion of the nail, of several rows of convoluted and variously twisted capillaries, their direction being from above to below, which vessels appear to be for the secretion of the horny part of the nail, and may therefore be termed the horn vessels. Other vessels were described, which he supposes are employed to secrete the cuticular matter of the nail. Between these is situated a plexus of vessels, whose office he considers to be the secretion of a substance intermediate in its properties between horn and cuticle, and serving to connect these together, and thus to facilitate the protrusion of the horny part of the nail, properly so called, and to preserve its connection with the surrounding integuments.

May 19, 1847.

A paper, by John Quekett, Esq., "On the Minute Arrangement of the Capillaries in the Respiratory Organs of Fishes," was read.

The author, after describing briefly the structure and arrangement of capillaries

generally, stated, that it was to the microscope that we were mainly indebted for what was known of the capillaries and of the capillary circulation. He then alluded to the large size of the capillaries in the reptilia, and to their minuteness in the gills of fishes; these last he purposed to consider more in detail. In osseous fish, he stated there were four gills on each side supported on long-curved branchial arches; each gill consisted either of a single or double series of lancet-shaped filaments, attached to the branchial arch like the teeth of a comb. In some animals, these filaments, or lamellæ, as they have been termed, were united at their bases, and upon them the respiratory mucous membrane was wonderfully plicated, the plicæ lying always in a direction at right angles to the lamellæ. The arteries which bring the impure blood to the gills, ran along the convex border of the branchial arch, whilst the vein ran in the opposite direction. Each artery gave off as many branches as there were lamellæ: the branches divided twice, and then ran along one edge of the plicæ of mucous membrane on the lamellæ, and the vein on the opposite edge, and between these vessels was the most minute plexus of capillaries ever yet described: they formed a delicate hexagonal net-work precisely analogous to that in the lungs of all vertebrate animals: the spaces between the capillaries was much less than the diameter of the capillaries themselves; and in the eel they were so close together that a tolerably good defining power was required to separate them.

The author also exhibited a lamella from the gill of a skate, in which the capillaries were much larger and more plainly seen than in those of the eel. He then concluded by stating that he had been acquainted with this arrangement of vessels for some years past, but, never having seen it described in works on the anatomy of fishes, he was induced to lay the same before the Society, as, without the aid of the microscope, the delicate arrangement of the respiratory vessels in these animals could never have been witnessed.

PECULIARITY OF MERCURIAL SALIVATION.

It has been recently observed, that mercurial preparations produce salivation only in those persons who are provided with teeth. In illustration of this, a case has lately come under the notice of M. Berard, in which a woman, having been submitted for some time to mercurial frictions, at length became salivated; but it was remarked that the increased flow of saliva was only manifested in the neighbourhood of two stumps of teeth with which her jaw was supplied.—*Ann. de Soc. Med. de Flandre.*

Correspondence.

ON THE CONNEXION BETWEEN DISEASES OF THE LUNGS AND SKIN—THE USE OF SULPHUR IN PULMONARY DISEASE.

SIR.—Having been a subscriber to your valuable publication from its commencement up to the period of my having been compelled from severe indisposition to relinquish practice, and as you have on several former occasions published papers of mine, particularly in the year 1831, on Fever, I shall be obliged by your giving space in one of your early numbers to the following observations and suggestions, on some forms of disease in the lungs.

Having for many years entertained opinions different to most other medical men on the origin and nature of diseases of the mucous membrane of the air-cells of the lungs and bronchial tubes, but which my professional engagements prevented my being able to communicate to the profession in a form that would be satisfactory to myself, for which reason I have delayed doing so from time to time, in the hope that at some future period I should be able to accomplish it, when, at more leisure for consideration, and with matured observations and suggestions on the mode of treatment I have pursued, founded on those opinions which further experience would justify me in recommending; but, unfortunately, the anguishing sufferings of an anomalous neuralgic affection, accompanied with a partially disabled state of my right hand, which I have laboured under for the last three years and a half, have rendered me still more unequal to the task than my professional engagements had done before.

Under these circumstances, I have been induced, by the wish of a friend, to send them to you in the form I can now most conveniently arrange.

I have often mentioned to some of my professional friends and acquaintances, my opinion that many diseases of the lungs, particularly the tubercular, which so generally terminate in phthisis, originate in the mucous membrane of the air-cells in the same manner as many diseases of the skin originate on the surface of the body. In the treatment of those affections, I have generally found a combination of such remedies as would be indicated in the diseases of the skin to which the constitution of the patient, under treatment, would seem to be most prone to produce beneficial effects, and thus to strengthen that opinion which, in a great many instances, the co-existence of such skin diseases has made the selection of such remedies easy.

There is no remedy amongst those usually

prescribed in skin diseases which, in my practice, I have found of so much service, as a general remedy, as sulphur; and next to that, the carbonate of potass, or liquor of potass: and very commonly I have combined them; but the sulphur, of all medicines of the class mentioned, has been the most useful. And in the majority of cases of cough, and irritation of the mucous membrane of the air-passages, not actually amounting to acute bronchitis, I have generally managed to introduce sulphur in some combination or other with advantage; but most of the remedies usually found serviceable in such cases of skin disease, to which the constitution of the patient, under treatment, would seem to be disposed, may, under certain circumstances, become useful: and I have found them so in practice, particularly some of the milder preparations of mercury, creosote, antimony, prussic acid, &c.

I do not mean to say that I have discarded other remedies usually had recourse to in such cases,—on the contrary, I have prescribed them with the medicines to which I allude, merely modifying their form, so that one shall not interfere with the effects of the other.

At the commencement of last winter, a cook-maid, who had recently come into my service, was found to have a very distressing cough, which she said she had been subject to for several winters, and nothing she had tried removed it, although she had been prescribed for by several physicians. She had evidently a predisposition to affections of the skin, was of a darkish sallow complexion, and several pustules of acne were conspicuous on her face. I prescribed an electuary for her, composed of sulphur, nitre, carbonate of potass, electuary of senna, and pargoric. In a week the cough was very nearly gone, and she had very little return of it up to the end of January, when she left my service. I have mentioned this case, as being the last I have prescribed for, having relinquished practice since the commencement of the distressing complaint under which I now labour, as it explains the principle on which I treat such cases, and may be useful to young practitioners.

When the similarity of the functions of the skin, and the mucous membrane of the air-cells of the lungs, are taken into consideration, it is reasonable to suppose that their diseases should be similar, making allowance for the difference of circumstances under which they are placed, the situation of the membranes of the air-cells and the bronchial tubes not admitting of that rapid evaporation of the secretions that take place on the surface of the body, and being less affected by the changes of temperature to which the surface of the body is exposed; consequently, the latter is comparatively dry,

and the former moist, from which there must be a corresponding modification of the air on the blood, although the similarity of the functions of both are notwithstanding preserved.

It has appeared to me that the hydropathic bandage, so much in use by those practitioners, would soon bring the surface of the abdomen, over which it is placed, into the state of a mucous membrane; and may be useful in that way in the cases for which they apply it.

Should these opinions prove correct, it will open a wide field for the investigation of tubercular and other diseases of the lungs, and of the air-passages, and, as far as my experience of such diseases will enable me to judge, will hold forth a prospect of a more successful treatment of such cases than has hitherto been obtained; and if these suggestions shall have the effect of leading more able persons than myself to investigate the opinions I have ventured to offer for their consideration, so as to establish their truth or fallacy, the object of this communication will have been partly attained.

There can scarcely be a medical practitioner of much experience who has not often met with cases in which the connection between affections of the skin and those of the lungs have not been clearly observed, and how the sudden disappearance of eruptions on the skin is so often followed by an almost suffocating state of the breathing, from which there is great difficulty of affording relief until the affection of the skin is restored; from which circumstance, and the similarity of the functions of these organs, it is easy to understand how such great relief is often afforded in complaints of the chest, from the effects of counter-irritation, and how the operation of frequent changes of temperature on the surface of the body is so much more frequently followed by inflammation of the air-passages than of other internal organs, independently of the inhalation of the cold air, which is evident from its injurious effects,—being much greater, and more frequent, when the surface of the body has not been well clothed than when inhaled under a state of full protection, in that respect, at an extreme degree of cold, even when accompanied with other circumstances favouring its operation. In fact, to preserve a proper state of health, there should be a certain balance between the function of the skin and that of the lungs, as it is probable the extent of surface of the air-cells of the lungs, and that of the skin on the surface of the body, if it could be accurately calculated, would be found about the same.

I am, sir,
Your obedient servant,
JAMES HOLBROOK, M.D.

Cheltenham, June 21st, 1847.

THE CLAIMS OF IDIOTS—A NEW OBJECT
FOR PHILANTHROPIC EFFORTS — AD-
DRESSED TO MEDICAL PRACTITIONERS.

(From a Correspondent.)

GENTLEMEN,—England has been amongst the first of nations to recognise the benefits of instruction, and it is to you that the parents of England's idiot sons and daughters look. To you we make this appeal—a noble work lies before you: you can interest a liberal public on behalf of this long-neglected and sorrowing race, whose claims demand our highest sympathy. Oh let not our country be behind-hand in philanthropic effort to ameliorate the condition of these unhappy sufferers. France has proclaimed that she has done the work, difficult as it has been. Prussia has borne noble testimony to its truth: and now let England, through her instrumentality, raise another building to the many already raised, and let that be dedicated to the lost in mind, the idiot child, for whom no effort in this country has yet been made.

That idiots are susceptible of both mental and moral improvement is an established fact. Dr. Alexander, in his work on Switzerland, gives an interesting account of a German physician who has consecrated his property, his talents, and energies for the benefit of these unhappy beings, these outcasts of humanity, and most encouraging have been the results. Dr. Scott's remarks on the Instruction of Idiots gives some pleasing information of the successful efforts made for the improvement of this neglected class. M. Seguin, of Paris, was entrusted with the care of ten idiots, who were inmates of the Hospital of Incurables, and these formed the subjects of his experiments: they were in the most deplorable condition physically and mentally, and yet the progress made in intellectual improvement was sufficient to induce the most sanguine anticipations of success, and to prompt the instructor to continue his labours with renewed ardour. The Bicêtre at Paris, a large hospital for the reception of idiot children, furnishes numerous and interesting facts. Selecting one among the many, a youth, 16 years of age, had been in the Bicêtre three years. When first admitted, he manifested all the characteristics of an inferior animal; his appetite was voracious; he would devour the most disgusting things; had all the sensuality of a brute, and a vicious propensity to destroy anything that came within his reach, attacking and biting every one who offered the least resistance to his disgusting propensities. Yet this being, who, in 1843, had been in so hopeless a condition, can now read, write, and calculate, and make good use of implements, partly contributing to the cost of his support. This is cheering,

and proves to demonstration that the object can be accomplished. And who does not wish that some effort should be made, and made speedily, for the benefit of a suffering class much more numerous than the public are aware, and for whom, strange to say, no legitimate effort has yet been made in England.

We concur in the opinion expressed by Dr. Scott when he says, "The attempt to elevate the imbecile from the melancholy position in which he stands is a holy work; it is to raise one who is lost to all that characterises humanity to the privileges of intellectual man, and to give back to the sorrowing mother, the responsive smile of a child's affection."

NORMAL COPPER IN THE HUMAN BODY.

THE French chemists are in the midst of a violent controversy on the question whether copper is or is not a natural constituent of the human body. The scientific world has at present the choice of three opinions. M. Orfila maintains that copper is always found in the human body—M. Flandin that it is never found as a natural constituent—and M. Chevalier advocates an intermediate view, *i. e.* that it is only occasionally met with—as in workers of metals, or those who have lived upon corn dressed with the salts of this metal! *Non nostrum est tantas componere lites.* M. Orfila is so well assured that his view alone is correct, that he proposed to commence on Thursday, June 24, a series of demonstrations on the subject at the Laboratory of the Faculty, on such a scale as to lead to the summary demolition of all chemical recusants.

We cannot understand why the French chemists are so eager to make it appear that the human body is a general repository of metals. One grand mistake on this subject has been already made by Orfila—as proved by the report of a Commission appointed by the Academy, and we should not be surprised if, when the prying eyes of some rival experimentalists are directed to the proceedings, some undiscovered source of fallacy was not brought to light. The ease with which such mistakes are made, when many reagents, or large quantities of particular reagents, are employed, is well known to all practical men. Some years ago, an excellent English chemist announced that he had discovered a large quantity of lead in an ore of zinc. The ore had been repeatedly examined by other chemists without any lead being detected. Processes were accurately compared, and it was then found that the discoverer had used powdered flint glass as flux, and that he had accidentally overlooked the fact that this contains a large quantity of lead!

Medical Intelligence.

ROYAL COLLEGE OF SURGEONS. ELECTION OF MEMBERS OF COUNCIL.

THE Annual Elections of three Fellows into the Council of the College took place on the 1st inst. in the theatre of the institution, when nearly all the metropolitan and a great number of the provincial Fellows attended. The President, Mr. Lawrence, accompanied by the Vice-Presidents, Messrs. Travers and Stanley, and several members of the council, entered the theatre at 3 o'clock, when the business commenced by the President delivering a short address, stating that by the provisions of the charter the three junior members of the council annually go out of office, and in order to fill up the vacancies thus created they were met that day, but that the three gentlemen retiring were eligible for re-election; he also stated that he had received a notice of the intention of some gentlemen to propose Mr. Skey; that gentlemen would certainly be put in nomination if either of the retiring councillors was not re-elected. In conclusion, he expressed a wish that the whole affair should be so conducted as to give satisfaction to all parties. After which the Secretary read the clause of charter and bye-laws relating to the election, which then commenced by ballot, when Mr. Edward Cutler, Surgeon to the St. George's and Lock Hospitals; Mr. Charles Aston Key, Senior Surgeon to Gay's Hospital; and Mr. Cesar Henry Hawkins, Surgeon to St. George's Hospital, were duly re-elected. After the election the Fellows adjourned to their annual dinner at the Freemasons' Tavern. It deserves to be mentioned that the leading medical practitioners of Birmingham, Bath, Exeter, Salisbury, Bristol, Norwich, Gloucester, &c. attended on this occasion to vote for the above gentlemen.

THE FRENCH MEDICAL REFORM BILL.

THIS important measure after considerable discussion passed the Chamber of Peers on Friday last. The number who voted amounted to 126.

White balls (in the affirmative) 101
Black balls (in the negative) . 25

Majority 76

The bill will be presented to the Chamber of Deputies, where it is likely to undergo some important modifications.

M. MALGAIGNE.

THIS eminent French surgeon has just been elected a Member of the Chamber of Deputies by one of the electoral districts of Paris.

His appearance as a legislator is singularly opportune, since he was a leading member of the Medical Congress, and is therefore likely to take an active and influential part in the discussions on the Medical Reform Bill which is about to be introduced.

QUARANTINE CONGRESS.

It is rumoured that a Congress is about to be assembled at Genoa for the improvement of the laws of quarantine, in so far as they affect the Mediterranean States.

PROHIBITION OF THE USE OF ETHER VAPOUR.

THE Grand Duke of Hesse-Darmstadt has just issued an order forbidding the use of the vapour of ether in operations by the lower grade of medical practitioners (*Officiers de Santé*), Dentists, and Midwives.

A PLEASANT SUBSTITUTE FOR EPSOM SALTS AS A PURGATIVE.

M. GAROT recommends the following formula for the preparation of tasteless purgative salts (citrate of magnesia) :—

Carbonate of magnesia	15 parts
Citric acid	21 to 22
Aromatic syrup	60
Water	300

The citric acid is separately dissolved and added to the carbonate of magnesia diffused in water.

As thus prepared it is not effervescent; but it is easily rendered so by adding only half the quantity of acid, and reserving the addition of the other half, until the dose is taken. The above proportions in grains would constitute a dose.

Dr. Pereira long since suggested the use of citrate of magnesia in nearly similar proportions. He found that one scruple of crystallized citric acid saturated about fourteen grains of light or heavy carbonate of magnesia.

IODINE DETECTED IN THE TESTICLES.

As a singular example of the diffusion of iodine through the system by absorption, Landerer mentions a case in which he clearly detected it after death in the testicles of a man who had suffered from sarcocele, and who, for this disease, had been in the habit of using externally and internally, preparations of iodine.—*Heller's Archiv*, 1847, H. 2, S. 185.

RESULTS OF THE ABUSE OF VINEGAR.

LANDERER observed in a wet-nurse who had been in the habit of drinking large quantities of the *Acetum Rosarum*, that the milk became impoverished, that it was of a specific gravity of 1.002, bluish-coloured, transparent, had a strongly acid taste, and a

well-marked odour of acetic acid. On analysis he found it to be deficient in casein and butter. The child gradually drooped, had diarrhoea, and finally died of marasmus. The woman herself in the course of a few weeks became pale, sickly, lost flesh, and suffered from chronic hæmorrhage.—*Heller's Archiv*, 1847, H. 2, S. 185.

USE OF HORSEFLESH AS FOOD.

AMONG the medical novelties of the day, may be mentioned, on the authority of the *Gazette Médicale*, that establishments have been recently opened at Berlin for the open sale of horseflesh as an article of human food. In order to render this innovation popular, a public banquet was recently held in the Prussian capital at which seventy persons sat down to feast upon the body of a mare which had reached the age of seven years!

ROYAL COLLEGE OF SURGEONS.

GENTLEMEN admitted Members on Friday, July 2.—J. O'Brien—J. Day—H. J. Rice—T. Park—F. Mason—C. D. R. Symons—G. A. H. Hepworth—M. Thomas—W. E. Hambly—W. Mott—A. Blyth—W. G. Cort—H. Crisp—E. W. Lowe—J. P. Badley.

APOTHECARIES' HALL.

NAMES of gentlemen who passed their examination and received certificates to practise July 1.—James Henry Thomas Vaughan Hughes, Nannerch Rectory, Flintshire—Joseph White, Nottingham—Thomas Rhodes Armitage, Farnley Hall, Leeds—Francis W. Merry, Shottesham, All Saints.

OBITUARY.

BIOGRAPHICAL NOTICE OF THE LATE

E. J. QUEKETT, ESQ.

In our last number we announced the decease of this gentleman. He died at his house in Wellclose Square, on Monday, June 28th, 1847, in the 39th year of his age.

Mr. Quekett was born at Langport, in the county of Somerset, in September 1808. He served his apprenticeship with Messrs. Norman and Michell, surgeons, of Langport, now both dead. In 1828, he commenced his attendance on medical lectures at University College, London; and pursued his studies with such diligence and assiduity, that he gained a gold medal in the class of Anatomy and Physiology,—another gold medal in that of Practical Anatomy,—and a silver medal in that of Chemistry: besides an honorary certificate in every class he attended.

In the year 1829, he passed his examination as licentiate of the Society of Apothecaries; and in 1830 obtained his diploma as member of the Royal College of Surgeons in England. He subsequently commenced the practice of his profession in Wellclose

Square, and for several years past held the appointment of Surgeon to the Tower Hamlets Dispensary. In 1835, he was appointed Lecturer on Botany in the London Hospital Medical School, which office he continued to hold at the time of his death. Mr. Quekett was the originator of the Microscopical Society of London; and was a Fellow and one of the Council of the Linnean Society. In 1843, he became joint editor, with Dr. Goodfellow, of the *London Physiological Journal*,—a monthly publication especially devoted to microscopical investigations, but of which only five numbers appeared.

Mr. Quekett's writings were confined to Natural History. His various papers are published in the *Transactions of the Linnean and Microscopical Societies*, in the *London Physiological Journal*, in the *London Medical Gazette*, and in the *Pharmaceutical Journal*.

Mr. Quekett's last illness commenced on Monday, June 21st, and was ushered in by shivering. He was able, however, to go out and see his patients on the following day, though suffering with soreness in the throat and pain on deglutition. On the evening of Tuesday an erythematous blush, but with scarcely any swelling, was perceived on his tonsils and uvula. His pulse was quick, his voice husky, and deglutition difficult and painful, the pain being referred to the left Eustachian tube. Within a few hours the pain shifted to the larynx, deglutition became impossible, or nearly so, and the voice was reduced to a whisper. The pain in the larynx, on an attempt being made to swallow, was most excruciating. This condition continued, with some slight but temporary alleviation for several days. On Saturday, June 27th, he suddenly exclaimed that something had burst in his throat, and that he thought he could swallow, and immediately afterwards he drank half a pint of liquid, though with some difficulty. From this time his voice began to mend, but deglutition continued painful and difficult to the time of his death. As soon as the laryngeal affection was somewhat alleviated, pulmonary symptoms became urgent. His breathing, which on the Friday afternoon, when deglutition was impossible, had been perfectly calm and quiet, was, on Sunday morning, short and quick. During the night of Saturday, as well as on the morning of Sunday, he complained of pain first in the loins, then over the liver, and lastly over the right lung. The pulmonary symptoms rapidly augmented, attended with extreme exhaustion, and on Monday evening (June 28th) he died. The post-mortem examination discovered puriform secretion in the pharynx, inflammation and ulceration of the

larynx, and pleuropneumonia of the right lung. The remedies employed were venesection (once), leeching (about seven dozen of leeches were applied at different times to the throat and chest), blisters, two doses of calomel (on the first day), mercurial inunctions, and enemata. After the first day it was found impossible to administer remedies by the mouth.

Mr. Quekett was a well-informed and sound practitioner, and a strictly honourable and upright man. He had a kind and benevolent heart, and was indefatigable in his attentions to his patients, by whom he was universally beloved. He died respected and regretted by all who knew him.

JOSEPH CURTIS, ESQ.

On Sunday, the 4th inst., at his house in Camden Town, Joseph Curtis, Esq., Surgeon, aged 47.

Selections from Journals.

SPECIAL PATHOLOGY.

CASE OF SPONTANEOUS CURE OF ANEURISM OF THE ARCH OF THE AORTA. BY DR. O. B. BELLINGHAM.

MARY PIERCE, *etat.* 64, a cook, was admitted into St. Vincent's Hospital, under my care, labouring under gangrene of the right lower extremity, which had commenced six weeks previously upon the anterior surface of the tibia, and had extended gradually until the muscles of the leg were laid bare and the cavity of the ankle-joint was exposed, and the gangrene had reached to within a few inches of the knee before she died.

Her chest was examined while in hospital, but nothing unusual was observed, except a double sound, similar to that of the heart, which was audible below the right clavicle, as if the sounds of the organ were transmitted beyond the usual limits. The action of the heart was perfectly regular and natural; there was no increased impulse, and no abnormal sound, nor was there any difference in the strength of the pulse at the wrists. As she suffered excessive pain in the limb, and complained of nothing else, she was not teased by a more minute examination of the chest, particularly as her temper was not the very best. I ascertained from her friends that she never was qualified to become a totaller, that she had had cough, and that she had occasionally suffered from palpitation, but it had never prevented her from following her avocation. When questioned herself, she denied having ever laboured under any chest affection beyond a trifling cough.

On a post-mortem examination, an aneu-

rism of the aorta was found, which sprung from that part of the arch where the ascending joins the transverse portion, and extended across the sternum to the right clavicle, where it formed adhesions to the right lung. It was about the size of the closed hand of the subject, and was completely filled with concentric layers of fibrine, which was very firm, and evidently of some standing. The aorta was dilated, its inner coats much distended with numerous ossific patches, and the orifice by which the aneurismal sac had communicated with the aorta would admit the point of the finger. The heart itself was about the normal size; the left ventricle was hypertrophied, its cavity diminished in size, and the left auriculo-ventricular orifice was smaller than natural; the right auriculo-ventricular orifice was normal; the valves were healthy; both coronary arteries were ossified; the femoral and popliteal arteries of the affected side were diseased, and the popliteal vein contained a firm coagulum. The lungs were healthy.—*Dublin Medical Press.*

. The statement of so careful an observer as Dr. Bellingham must of course have great weight; but we should have been more satisfied with the above case had the condition of the fibrine at the *mouth of the sac* been more expressly described. The complete filling of an aneurismal sac with firm adherent layers of decolorized fibrine, the canal of the vessel still remaining pervious, certainly forms one of the principal features in a process of spontaneous cure; but, so long as there remain any interstices between the fibrinous layers still exposed to the current of the blood, or any irregular surface upon those layers over which a coagulum may be deposited, a cure cannot be said to be effected; for, at any period, a quantity of fluid blood may insinuate itself between the layers, breaking up their connections, separating them extensively, and thus producing renewed distension in the sac, or a massive coagulum may be deposited over the roughened surface at the mouth of the cavity, and will then, by its resistance to the current of blood, tend to increase the widening of the diseased vessel at that point, and to press the entire sac outwards against some neighbouring structure. We have had frequent opportunities of observing both of these processes in various degrees and stages. An aneurism of the ascending aorta can only be stated to be cured when its orifice is completely occluded by a firm layer of dense fibrine which is perfectly level and continuous with the lining membrane of the vessel, and which does not present any irregularities of surface that may produce a tendency to infiltration or deposit of blood. An appearance of this kind has been

several times observed in very small aneurisms of the aortic arch; but we are not aware that larger sacs have been found occluded in this manner.—ED. GAZ.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, June 26.

BIRTHS.	DEATHS.	Av. of 5 Spr.
Males.... 676	Males.... 471	Males.... 466
Females.. 679	Females.. 450	Females.. 446
1355	921	914

DEATHS IN DIFFERENT DISTRICTS.

West—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	131
NORTH—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 366,303)	225
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	161
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 393,247)	184
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich .. (Pop. 479,469)	230
Total	921

CAUSES OF DEATH.

ALL CAUSES	921	Spring av. 914
SPECIFIED CAUSES	911	909
1. Zymotic (Epidemic, Endemic, Contagious) Diseases ..	260	166
Sporadic Diseases, viz.—		
2. Dropsy, Cancer, &c. of uncertain seat	96	99
3. Brain, Spinal Marrow, Nerves, and Senses	186	158
4. Lungs and other Organs of Respiration	253	275
5. Heart and Bloodvessels	32	39
6. Stomach, Liver, and other Organs of Digestion	74	70
7. Diseases of the Kidneys, &c.	15	8
8. Childbirth, Diseases of the Uterus, &c.	15	10
9. Rheumatism, Diseases of the Bones, Joints, &c.	13	8
10. Skin, Cellular Tissue, &c.	2	2
11. Old Age	26	27
12. Violence, Privation, Cold, and Intemperance	35	28

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	26	Convulsion.....	37
Measles	42	Bronchitis	23
Scarlatina	11	Pneumonia.....	53
Whooping-cough..	18	Phthisis.....	134
Typhus	58	Dis. of Lungs, &c.	10
Dropey.....	11	Teething.....	8
Sudden deaths ..	10	Dis. Stomach, &c.	5
		Dis. of Liver, &c.	9
Hydrocephalus..	34	Childbirth.....	7
Apoplexy.....	23	Dis. of Uterus, &c.	5
Paralysis.....	15		

REMARKS.—The total number of deaths was only 7 above the weekly spring average. The mortality from measles and typhus fever is much above the average. The greatest number of deaths from typhus fever are recorded among persons between the ages of 15 and 60.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	29.63
" " Thermometer	50.7
Self-registering do. max. 92° min. 34.5°	
" in the Thames water — 64° — 60.2°	
a From 12 observations daily. b Sun.	

RAIN, in inches, .35: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 8° below the mean of the month.

NOTICES TO CORRESPONDENTS.

The communication respecting Queen's College, Birmingham, can only be inserted as an advertisement.

We beg to decline Mr. F. W. Barlow's paper, as it has been already published in another journal.

Dr. R. E. Carlisle.—The subject to which our correspondent refers is of considerable importance to the profession, and shall shortly receive that attention which it deserves. A coroner cannot legally order more than *two guineas* for a fee, whatever time, expense, and trouble may have been incurred in an analysis. The magistrates of some counties are liberal, and will pay an additional sum if the coroner certify that such an extra-payment was warranted by the circumstances. The magistrates of other counties are illiberal, and think medical witnesses overpaid for such responsible services by the two guineas allowed under the act of parliament! We know cases where they have profited by analyses, and have declined paying a farthing, because the witness refused the legal tender of two guineas! The only course open in the present case, is to procure an order from the judge, by application to the judge's associate at the ensuing assizes; and this may be done by the aid of the coroner or the counsel engaged for the prosecution. The amount claimed is only a fair remuneration.

Orthography writes to complain that medical authors are in the constant habit of misspelling the words *cord* and *sac*,—thus, "chord," "sac." We can assign no other reason for this than that the schoolmaster is undoubtedly required for many who are privileged to write M.D. after their names. The word *chord*, as our correspondent states, is only applicable to music and geometry; and yet in some of our best physiological works we find the authors speaking of the spinal "chord," nervous "chords," &c. Any Dictionary would show them that this was an error.—The word *sac* is unknown to the English language.

Mr. Gaskell's letter to the Visiting Justices of the Lancaster Lunatic Asylum shall receive our attention.

Mr. E. Warren's pamphlet on Ether Vapour, entitled, "Who is the Discoverer?" has come to hand.

A lecture on Albuminuria, by Dr. Rees, and an interesting case of Hydrophobia, by Mr. Spencer Wells, of Malta, will appear in the following number.

We are obliged to Mr. Bacot for his note, but no account of the event to which he refers, appeared in the Medical Gazette.

Mr. F. Dynter's case of Ascites will be inserted. Dr. Oppenheim's letter of May 24th, in reference to the exchange of the journal, has been forwarded to the publishers.

We beg to acknowledge the receipt of three lectures from Dr. Day.

We have also received from Dr. F. Adams, Bamchory, a paper on the Construction of the Placenta, &c.

Lectures.

LECTURES
ON THE
DISEASES OF INFANCY AND
CHILDHOOD,

Delivered at the Middlesex Hospital,

By CHARLES WEST, M.D.

Physician-Accoucheur to, and Lecturer on Midwifery at, the Middlesex Hospital, and Senior Physician to the Royal Infirmary for Children.

LECTURE VI.

Hydrocephalus, continued. Diversities in its course and in its modes of attack—insidious approach in phthisical subjects—resemblance of its symptoms to those of remittent fever, of simple gastric disorder—serious import of continued sickness in cases of gastric disorder.

Prognosis. Disease almost always fatal—appearances of improvements often deceptive—cautions against being misled by them.

Duration of the disease—real nature of cases of waterstroke.

Treatment.—Prophylaxis—Treatment of the disease—rules for depletion, for use of purgatives, mercurials, application of cold—Diet of patients—circumstances under which opiates may be useful—when blisters are to be applied.

Conclusion.

GENTLEMEN,—It can scarcely be necessary to tell you that acute hydrocephalus does not always run precisely that course which I described to you at our last meeting. Almost every case, indeed, presents some slight peculiarity either in the comparative severity of the different symptoms, in the date of their occurrence, or in the order in which they succeed each other. Convulsions, for instance, though hardly ever absent, occur earlier in one case than in another,—affect in one the whole body, in another are limited to one side,—are succeeded in one instance by paralysis, in another by a stiff and contracted state of the limbs. Again, coma sometimes comes on gradually, at other times takes place suddenly; in one instance it continues long, in another is speedily followed by death. The pupils sometimes become early insensible to light, at other times they continue to act, though slowly, almost to the time of death; and in like manner strabismus may exist in various forms, or there may be constant rotation of the eyeball, or neither

of these symptoms may be present; and yet we cannot couple these diversities in the signs of the disease with any certain differences in the morbid appearances. But, how much soever one case of hydrocephalus may differ from another in these respects, such differences are of comparatively little moment, since whether these symptoms occur early or late,—whether they are slight or severe,—short in their duration, or of long continuance,—the appearance of any one of them stamps the character of the disease too plainly for it to be mistaken; and indicates not the incipient but the fully developed evil. The deviations from the ordinary mode of its attack are far more important, since they may lead you to mistake the nature of the disease during the only time when treatment is likely to be of much avail.

The healthy and robust are comparatively seldom attacked by hydrocephalus, and in many instances the indications of declining health precede for weeks or months the real premonitory symptoms of the disease. You may, however, be so much taken up with watching the former as to overlook the latter, or to misinterpret their meaning. Your solicitude is excited by the gradual decay of a child's strength and the wasting of its flesh. You observe that it becomes subject to irregular febrile attacks,—that it coughs a little,—that it loses its appetite,—that its bowels are almost always disordered, and generally constipated,—and that it makes frequent vague complaints of pains in its limbs, or of weariness or headache. These symptoms, which depend upon that general deposit of tubercle in the different organs of the body which almost every dissection of fatal cases of hydrocephalus reveals, make you apprehensive lest phthisis be about to come on, and you often auscultate the chest in the expectation of discovering some signs of disease in the lungs. At length, the child seems worse,—he coughs more, and is more feverish,—grows heavier and more dull, but does not complain more about his head,—or, at most, says that the cough makes his head ache. The parents think the child must have caught cold, and you do not see the indication of any new disorder; for, though listless and moody, he still moves about in the house, and sometimes plays, though in a spiritless manner. Simple treatment seems to do a little good, and you not unnaturally hope that the aggravation of the symptoms will prove only temporary; but, after an unusually restless night, a fit of convulsions comes on, or the listlessness deepens in the course of a few hours, and without any evident cause, into profound coma, and a very few days terminate the patient's life.

In such a case as this, you would, it is

true, most likely be able to do little or nothing, even if you recognised the approach of hydrocephalus from the earliest indication of its coming. But you would save your patient's friends some sorrow, and yourself some reproach, if you discovered the danger at a distance. Now, whenever any child, especially if it be of a consumptive family, has been failing in health for some weeks or months, without evident cause, I advise you to look with much suspicion on the supervention of unusual drowsiness or listlessness, or on any aggravation of the cough, for which you cannot find adequate reason in the information afforded by auscultation. A frequent, short, dry cough is not infrequent at the commencement of hydrocephalus; but in cases where cough has existed for some time, you are very likely to refer its aggravation to mischief in the chest, and to lose sight of its possible connection with affection of the brain: inquire, therefore, in every doubtful case whether there has been any vomiting,—for sometimes it is but slight, and occurs only after food has been taken, and then only occasionally, so that it may seem to the parents to be a symptom of little importance. Ascertain the condition of the bowels, watch the pulse most carefully; it may not be irregular or intermittent, but you will probably find a little inequality in the force and duration of its beats: if so, you may be sure that the head is suffering, and if the head suffers in such a patient it is in ninety-nine cases out of a hundred from the approach of hydrocephalus. Do not content yourself with seeing your patient once a day, visit him at least morning and evening,—stay some time with him, watch him closely, and see how far he is capable of being amused: but if you be still strangers to that freemasonry, which assures a little child that you love it, you will very likely fail of arriving at the truth.

But it may happen that a child, though not robust, had yet been tolerably well till a week or two before you visited it, and that it was then attacked with febrile symptoms, with a little headache, and perhaps with vomiting and constipation. You learn that these two symptoms were but of short duration, but that the fever has continued ever since, and that the child has been very taciturn, rather drowsy, and averse to being disturbed, though giving rational answers when spoken to. You regard the case as one of remittent fever, and treat it without either improvement or determination, till the appearance of convulsions or coma corrects your diagnosis, though unfortunately too late.

It must be confessed that it is sometimes a matter of great difficulty to distinguish between these two affections. It may help

you, indeed, to bear in mind that remittent fever is very rare before five years of age, and is hardly ever met with in children under three; while at least half of all cases of hydrocephalus occur in children who have not completed their fifth year. But still this is not the kind of evidence on which you can place much reliance in a doubtful case. There are differences in the symptoms, however, which will generally enable you to discriminate between them, if you have acquired the habit of minute and careful observation. The vomiting, on which I have laid so much stress as a symptom of approaching hydrocephalus, is often absent even at the onset of remittent fever; it soon ceases, and is not followed by that abiding nausea which is frequent in hydrocephalus. In remittent fever the bowels are often relaxed from the very outset, or speedily become so, and the evacuations present no resemblance to the scanty, dark, or many-coloured motions which are voided in hydrocephalus, but are usually watery, fecal, and of a lightish colour. Tenderness of the abdomen is nearly constant in remittent fever, and is greater in the iliac regions than elsewhere, and wind can always be felt in the intestines. The tongue is not moist as in hydrocephalus, and is seldom much loaded, but has only a thin coating of yellow fur in the centre and towards the root, while it is very red at the tip and edges, and becomes dry at an early stage of the disease. In hydrocephalus there is frequently a great distaste for drink as well as for food, while, although the appetite is lost in cases of remittent fever, yet the patients have great desire for drink, especially for cold drink, to quench the urgent thirst. The heat of skin in remittent fever is extremely pungent, and much greater than in hydrocephalus, in which, although there is great dryness of the surface, yet the temperature is seldom much increased. The pulse in remittent fever is much quicker than in hydrocephalus, it continues quick throughout, and never becomes unequal or irregular, while its frequency is in direct proportion to the elevation of the temperature of the surface. In remittent fever the child makes few complaints about its head, but delirium is of early occurrence, especially at night; in hydrocephalus, on the contrary, true delirium hardly ever occurs till an advanced period of the disease, and is sometimes absent altogether. In remittent fever, as its name implies, there are distinct remissions and exacerbations of the symptoms, the patient getting better towards morning, and worse again as night approaches; while, though there are many fluctuations in the course of hydrocephalus, yet we observe no *definite* periods at which the symptoms invariably remit or are increased in severity.

With due caution you will scarcely take a case of incipient hydrocephalus for one of simple gastric disorder, though there are many points of resemblance between the two. Vomiting and constipation occur in both, and there is usually some degree of headache in the latter affection, though seldom severe or lasting. Mere gastric disorder is not attended with much febrile disturbance; the face, though heavy, is not distressed or anxious, while the tongue is usually much more coated than at the onset of an attack of hydrocephalus. The relief that follows the use of remedies in the less dangerous affection is complete as well as speedy; the sickness will cease after the operation of an emetic, the bowels will act copiously after the administration of a brisk purgative, and in a day or two your patient will be quite well. The persistence of vomiting, however, in any case which you had thought to be one merely of gastric disorder, must be looked upon by you with great suspicion, and this even though the bowels have acted freely from medicine, and though there be no obvious indication of mischief in the head. I once saw a case in which the continuance of intractable vomiting for more than six weeks after the cessation of a short but severe attack of diarrhoea, was the only symptom of illness in a boy five years of age. At length he became a little drowsy, and once or twice, when closely questioned, said that his head ached. Not quite two days after the first complaint of headache, the child had a violent fit of convulsions, and in the course of the succeeding week he died, having suffered during that time from all the symptoms of acute hydrocephalus, and his body presenting after death its characteristic lesions.

An inquiry of little less importance than that concerning the means of distinguishing between one disease and another respects the prognosis that we are to form, the inferences that we may draw, from the course of the malady, either to encourage hope or to excite anxiety. Unfortunately the prognosis in hydrocephalus is so unfavourable that we can scarcely speak of the circumstances which regulate it; for under almost every variety of condition, of symptoms, and of treatment, the patients die. I have never yet seen an instance of recovery from advanced hydrocephalus: I have seen but one in which the child got well after the disease was well marked and the second stage had commenced, and have observed only very few cases have a favourable issue even though they came under treatment immediately on the appearance of the premonitory symptoms of water in the brain. This result is, I know, more discouraging than that which other practitioners have arrived at; but M. Guersant, of Paris, who has pro-

bably had a larger experience than any other man now living in the management of children's diseases, does not seem to have been more fortunate.

"Tubercular meningitis," says he (by which name French writers have designated the disease that we are now studying), "may sometimes terminate by recovery in the first stage, though the nature of such cases is always more or less doubtful; in the second stage I have not seen one child recover out of a hundred, and even those who seemed to have recovered have either sunk afterwards under a return of the same disease in its acute form, or have died of phthisis. As to patients in whom the disease has reached the third stage, I have never seen them improve even for a moment."*

Since the fatality of the disease is so invariable, it may seem to you superfluous for me to say anything more with reference to the prognosis; but I am desirous of guarding you against being deceived by certain delusive appearances of improvement which are by no means unusual even in cases where the real nature of the disease has for some two or three days been clearly manifest. A few years ago, a little girl, 3 years old, was brought to me in a state of profound coma, and presenting the symptoms of the third stage of acute hydrocephalus, of which she died forty-eight hours afterwards, without having had any return of consciousness. I learned from the mother that, fourteen days previously, the child had been attacked with vomiting, attended with fever and great drowsiness, but that these symptoms abated in three days, and that the child improved and was regaining her cheerfulness until the morning of the day before she was brought to me, when her mother found her comatose and in just the condition in which she was when I saw her. A more acute observer than this child's mother would probably have seen something to make her mistrust the apparent improvement; but it is evident the change was great from fever and drowsiness and frequent vomiting to a cessation of the sickness, a diminution of the fever, and a return of cheerfulness; and yet during all this time disease was going on, and producing the very extensive softening of the central and posterior parts of the brain which was discovered after death. The cases in which you are likely to fall into error are for the most part such as have come on insidiously, unattended with very violent symptoms, and about which you perhaps hesitated some little time before you became convinced that so grave a malady as hydrocephalus could wear so mild a form.

* Dict. Méd. t. xix. p. 403, quoted by MM. Rilliet and Barthez, op. cit. t. iii. p. 531.

Treatment for some days produces no effect, the disease remaining stationary; but at length your hopes are raised by finding that the vomiting has ceased, and that the constipated condition of the bowels has been overcome. The heat of head has disappeared, the pulse presents much less irregularity than before, or may even have lost it altogether, and the child's restlessness has subsided, and its manner is almost natural. Perhaps the child seems rather drowsy, or it may be sleeping, at the time of your visit, but the account you hear of it seems satisfactory: its repose is quiet, and the mother rejoices: her little one has had no sound sleep for many days, and will, she thinks—and you may think so too—be much better when it wakes. It does not wake up, but it swallows well when some drink is given in a spoon, and the mother is still content. Presently slight twitches of the face and hands are seen, but the child does not wake,—you cannot rouse it: the sleep has passed into coma, and the coma will end in death. Always suspect the sleep which follows continued restlessness in a case of hydrocephalus.

In other cases, although the disease did not come on so insidiously, and although it has reached a stage at which all its characters are well marked, you may yet be led for a few hours to entertain, and perhaps to express, ill founded hopes, in consequence of the symptoms having somewhat abated, of the child having had some hours of quiet sleep, or having ceased to vomit, or no longer complaining of its head, or being visited by a short gleam of cheerfulness. You must not forget, however, that it is characteristic of hydrocephalus to present *irregular* remissions, that they last but for a few hours, and that at your next visit you may find every bad symptom returned, and, possibly, some fresh one superadded. Usually, too, you may be guarded from error by observing the suddenness of the change, and that the condition which has now come on is the very opposite of that which before existed, preternatural excitement having been succeeded by an equally unnatural apathy, or great talkativeness having taken the place of obstinate silence, or the pulse, which before was above 120, having sunk all at once to 90 in the minute. At other times, though there is a general abatement in all the previous symptoms, yet some new one may have appeared, not more formidable, perhaps, than the occurrence of a slight degree of strabismus which had not existed before, but still enough to indicate that the mischief is still going on, and that you must not dare to hope.

A still more remarkable temporary improvement is sometimes observed—that “lightening before death” which seems,

contrary to all expectation, to warrant a hope of recovery even when dissolution is impending. The only instance of it that has come under my observation occurred in a girl aged 7 years, who died on the fifteenth day of an attack of acute hydrocephalus. She had been in a state of stupor for six days, and profoundly comatose for two days, when she became conscious, swallowed some drink, spoke sensibly, and said she knew her father. She became worse again, however, in the course of an hour and a half, though she did not sink into the same deep coma as before, and in another hour she died.

A few points still remain on which I must touch before passing to the consideration of the treatment of hydrocephalus. One of these is the question of its duration. The exact determination of this is not always easy, owing to the insidious manner in which the disease comes on; but, on the whole, there is less discrepancy than might have been expected between the statements of different writers. Of 117 cases observed or collected by Dr. Hennis Green, 80 terminated within 14 days, and 111 within 20 days. Of 28 cases recorded by Gölis,* 18 terminated within 14 days, and only 2 exceeded 20 days. MM. Rilliet and Barthet† state the average duration of 28 cases that came under their observation to have been 22 days; and the average duration of 30 fatal cases of which I have a complete record, was 20½ days. Of these 30 cases, that which ran the most rapid course terminated fatally in five days; death took place in 10 more before the fourteenth day; in 11 others during the third week, and in 3 during the fourth week. In the remaining five cases, indications of cerebral disturbance had existed for four, six, or eight weeks; but death took place in every instance in less than 21 days after the appearance of well-marked symptoms of hydrocephalus. We are, then, warranted in stating that the disease usually runs its course in from two to three weeks.

The late celebrated Dr. Gölis, of Vienna, proposed the name of waterstroke for some cases in which the head symptoms were of such short duration as not to exceed 24 or 48 hours. Such a rapid course, however, is not observed in true tuberculous hydrocephalus; but the name of waterstroke has been applied to a great variety of cases which have presented little in common, except the presence of head symptoms, and their rapidly fatal termination.* The appellation has been sometimes bestowed on cases of intense cerebral congestion; at other times on cases of simple meningitis. In a few instances the name may have been given

* *Praktische Abhandlungen*, etc. 8vo. Wien, 1820, vol. i.

† *Op. cit.* iii. p. 497.

* In proof of this statement, see Gölis, *lib. cit.* cases 1 to 9.

to cases of true hydrocephalus in which the rapid course of the disease has been apparent, rather than real, owing to its having succeeded to chicken-pox, or came on in the course of that febrile disturbance which vaccination sometimes excites, or which attends upon dentition. Under such circumstances, it often happens that the manifestations of cerebral disease are mistakenly attributed entirely to the previous cause of irritation in the system, so that, when the signs of serious mischief force themselves upon the notice, the hydrocephalus has well nigh run its course.

In describing this disease, I divided it into three stages, but did so simply for convenience. Many physicians, however, have attached much greater importance to this division regarding the first as the stage of torpor; the second as that of inflammation; the third, that of effusion. Again, the first has been characterised as the stage of increased sensibility; the second, of diminished sensibility; the third, of palsy. Lastly, Dr. Whytt proposed a division that has been much followed, based on the variations of the pulse, which is usually quick and regular in the first stage, slow and irregular in the second, and quick in the third. There are too many exceptions, however, to the order of these changes for it to be right to make them the foundation of any division of the disease into different stages; and the same remark may be made with reference to any arrangement founded on the variations in the sensibility of the patient.

I have said that the phenomena of the pulse are not constant: I need scarcely add, that the slow, irregular pulse is no proof of the occurrence of effusion; neither is the dilated pupil a proof of it: it is a proof of great mischief having been inflicted on the brain; so are the strabismus and the rolling of the eyes which frequently accompany it; but you cannot connect these symptoms with injuries of a special kind, or involving particular parts of the brain.

Although a disease of childhood, acute hydrocephalus is by no means most frequent in early infancy. In only 5 of 31 fatal cases in which the diagnosis was confirmed by a post-mortem examination, were my patients under a year old; 7 were under 3 years of age; 16 between 3 and 6; and the remaining 3 between 6 and 9 years old.*

* The statement made by a writer of high eminence, that hydrocephalus is much more frequent during the first year of life than subsequently, must be regarded as erroneous; for it appears from the Third Report of the Registrar-General, that, while only 7.5 per cent. of the total deaths under one year old in this metropolis resulted from cephalitis and hydrocephalus, these diseases caused 12.8 per cent. of the deaths between 1 and 3; 13 per cent. of those between 3 and 5; 11.5 per cent. of those between 5 and 10; and 6.4 per cent. of those between 10 and 15.

From all that I have told you about hydrocephalus, you have, I doubt not, already deduced the practical inference, that the only treatment likely to avail much is the prophylactic; and that, if you would hope ever to save a patient, you must treat the mere threatenings of his disease, and not remain inactive until you see the malady fully developed before you.

The prophylactic treatment of hydrocephalus must be in the main the prophylactic treatment of consumption, since not only is tubercle invariably present in the various organs of children who have died of hydrocephalus, but the disease itself often supervenes on more or less definite phthisical symptoms. The influence of hereditary predisposition to phthisis, in favouring the development of hydrocephalus, is shewn by the fact that not only was the previous health of the children indifferent in two-thirds of the cases that came under my notice, but that, in 16 out of 20 instances in which the health of the relatives was made the subject of special inquiry, it was ascertained that either the father, mother, aunt, or uncle, had died of phthisis.

In any case where several children of the same family have already died of hydrocephalus, or have shewn a marked tendency to the disease, the mother should for the future abstain from suckling her infants, and they should be brought up by a healthy wet-nurse. Under such circumstances, too, it would be desirable that a child should always live in the country; its clothing should be warm, and flannel should be worn next the skin; its diet should be simple, and any change in it should be made with the greatest caution, while milk should for a long time form one of its chief aliments; and it would be desirable not to wean it until after it had cut four molar teeth, as well as all the incisors. As it grows up, over exertion, either of mind or body, must be most carefully avoided; and on this account, though free exercise in the air is highly beneficial, gymnastic exercises are by no means to be recommended. The child must be watched carefully during the whole period of dentition, and every precaution must be taken to shield it from the contagion of measles, whooping-cough, or scarlatina; since these diseases, which tend to excite the tuberculous cachexy, would be likely greatly to aggravate the disposition to hydrocephalus, or even to bring on an attack of the disease. The condition of the bowels must be most carefully watched, constipation must not be allowed to exist even for a day, and the least indication of gastric disorder must be regarded as a serious matter. It is not desirable that calomel should be used as a domestic remedy; but if the simplest aperients (such as castor oil, or the infusion of senna, or of rhubarb, the

taste of which may be concealed by carraway-water,) do not act, the child should be immediately placed under proper medical care. If at any time there should be heat of head, and the child appear squeamish, you must be at hand with your remedies, and those well chosen. Any bulky remedy would probably be rejected, but the stomach is almost sure to bear a grain or two of calomel with sugar, and you may follow this up with a small quantity of sulphate of magnesia, dissolved in water, flavoured with syrup of orange peel, which may be repeated every hour. A small dose of mercury and chalk, or of calomel, may be continued every night for two or three times, and if any feverishness remain, or the bowels be disposed to be constipated, the sulphate of magnesia may still be given twice or thrice a day. Leeches should not be applied to the head without very obvious necessity, nor then in large numbers, for strumous children do not bear the loss of blood well; and your endeavour should therefore always be, not simply to cure, but to cure at the smallest possible expense to the constitution. After attacks of this kind, children sometimes recover their health very slowly, and much good may then be effected by a judicious use of tonics. The infusion of calumba, with a small dose of tincture of rhubarb, is a very suitable medicine, and one which children generally take tolerably well. Or you may give the ferro-citrate of quinine in orange-flower-water, and sweetened with the syrup of orange peel, while you secure the healthy action of the bowels by a grain or two of Hydr. c. Cretâ, combined with five or six of rhubarb, administered every night, or every other night.

If threatenings of head affection have frequently occurred, an issue should be inserted in the back of the neck; for the keeping up a constant discharge from the neighbourhood of the head, is certainly very serviceable in many instances as a means of warding off hydrocephalus. A most remarkable instance of this is recorded by Dr. Cheyne, who mentions that all the children in a numerous family were carried off by water in the brain, with the exception of one, in whose case the precaution was adopted of putting a seton in the back of his neck.

But the opportunity may not be afforded you of adopting this prophylactic treatment; and when you first see your patient, the existence of headache, vomiting, constipation, and a quickened pulse, with perhaps a very slight inequality in its beat, may leave you but little doubt as to the formidable nature of the disease with which you have to contend. In doing this, there are three remedies on which your main reliance must be placed,—depletion, purging, and the administration of mercury.

With reference to depletion, you must not forget that the disease in which you are about to employ it, although of inflammatory nature, is inflammation in a scrofulous subject, and is in many cases grafted on previous organic disease; such as those tubercular deposits in the membranes of the brain, which I have already described to you. You cannot, therefore, hope to cut short the affection by a large bleeding, but your object must be to take blood enough to relieve the congested brain, and no more than is necessary for that purpose. Avoid precipitancy in what you do, and do not let your apprehensions betray you into that over-activity which is sometimes more fatal to a patient than his disease. If you feel any doubt as to the necessity for depletion, visit your patient again before determining on it, but do not delay that visit long. Order a dose of calomel, to be followed by some sulphate of magnesia, if, as is most probable, the bowels be confined, and return again in three or four hours. You may then find that the bowels have acted, and the sickness has ceased; that the head is cooler, and aches less, and that depletion is, for the present at any rate, unnecessary. Or the child's state may be the same, and you may still feel uncertain as to the right course. In that case, at once obtain the assistance of some other practitioner: this is the season when advice may be really useful, for it is only at the outset of the disease that its cure is possible; when convulsions have occurred, or coma is coming on, your treatment matters comparatively little, for the season of hope and the opportunity for action have then fled.

Though you may have determined on the propriety of depletion, it will be seldom found, even at the outset of the disease, that the character of the pulse is such as to warrant venesection. Local bleeding will generally answer every purpose, and the age and docility of the patient will determine whether it shall be performed by cupping or by the application of leeches. The former is more effective, and, from its shorter duration, often occasions less excitement and annoyance than the latter. In children who are very unmanageable, however, or in very young children or infants, the employment of leeches is always preferable. They should be applied to the vertex, because, if put on the temples, they hang down over the eyes and terrify the child; if behind the ears, they are very likely to be rubbed off as it rolls its head from side to side. I will not say that this depletion is never to be repeated, but I believe that in by far the greater number of cases, you will do no good whatever by its repetition, and the exceptional cases will generally be those in which, very marked relief having followed the first

bleeding, the same symptoms of congestion of the brain appear to be returning twenty-four or thirty-six hours afterwards. If you do not see the child until the second stage of the disease is far advanced,—till general convulsions have occurred, or twitchings of the limbs, or of the muscles of the face, an appearance of extreme alarm, or a state of alternate contraction and dilatation of the pupils show them to be impending, you must be exceedingly careful in abstracting blood. Under such circumstances, I have seen convulsions, to all appearance, induced, and the fatal course of the disease accelerated by a rather free, though by no means immoderate, loss of blood.

The value of purgatives in the treatment of hydrocephalus, can scarcely be overrated; but they must be given so as not merely to obtain free action of the bowels, but to maintain it for some days. After having once overcome the constipation, you will secure this end but by giving small doses of a purgative every four or six hours. The administration of a strong cathartic every morning will not answer this end nearly so well; for, independently of the chance of its being rejected by the stomach, you will find that the dose which sufficed the first time will not be large enough the second, and that there will be a constantly increasing difficulty in obtaining an evacuation. The nausea and vomiting which at first stood in the way of your administering any medicine, are often so much relieved by depletion, that the stomach will almost immediately afterwards bear a dose of calomel and jalap, or calomel and scammony, which may be repeated every three hours, until they act, while you, at the same time, endeavour to quicken their operation by the administration of a purgative enema. There is no use, however, in persevering with them if they excite sickness; and it is then better to give a single large dose of calomel in some loaf sugar, and to follow it up by a solution of sulphate of magnesia, which should be repeated at short intervals. When a free evacuation has been obtained, the same salt, in combination with the nitrate of potash, will often keep up a free action of the bowels, as well as stimulate the kidneys to increased activity. These remedies may either be mixed with the child's drink, or be dissolved in water flavoured with syrup of lemon or of orange peel.

Hand in hand with purgatives I would have you continue the administration of calomel; but I do not put faith in calomel alone, nor in the production of salivation as a means of curing hydrocephalus. I have seen children die whose mouths had been made sore by mercury, without any influence appearing to have been thereby

exerted on the disease; and I recollect two who, at the time of their death, were in a state of most profuse salivation. Whatever good I have seen in these cases from calomel has been when it was given in combination with purgatives, or when it produced a purgative effect.

Let me, however, again remind you that you may have hydrocephalus combined with tubercular ulceration of the intestines, and that in such a case diarrhoea may exist from the outset, or may come on after a mild dose of some aperient. Now and then, too, without such a cause, constipation is absent, while diarrhoea comes on occasionally in the far advanced disease. You must not therefore draw inferences as to the state of the patient too exclusively from the condition of the bowels.

I insisted much on the local employment of cold when speaking about the management of cases of cerebral congestion. It is likewise a very valuable agent in the treatment of hydrocephalus, but its application requires to be judiciously regulated. You will generally find it of service after depletion, for you have abstracted blood on account of the febrile disturbance, and heat of head, and other indications of congestion of the brain, all of which cold will be a powerful auxiliary in subduing. So long as the signs of active congestion of the brain are present cold will be of service; but it should not be employed independently of those symptoms which betoken the existence of that condition; nor can you hope to see any benefit result from cold applications to the head in the advanced stages of the disease. I need scarcely say that the application of cold with a shock, or the pouring cold water from a height upon the head, though a very valuable means of rousing a child from the state of coma into which it sinks in some cases of intense cerebral congestion, is wholly inapplicable in the coma of hydrocephalus. The functions of the brain are here not merely interrupted by the excess of blood in the organ, but they are abolished by the disorganization of its tissue, or the compression of its substance by the effusion of fluid.

In the management of children attacked by hydrocephalus, you must not forget that for the most part they are of feeble constitution, and that they will not bear too rigorous a diet. Just at first, indeed, while the febrile symptoms run high, and the bowels are unrelieved, or the sickness is urgent, the less the patient takes the better. Afterwards, however, it is desirable that he should be supplied with as much light and unstimulating nutriment as he will take; such, for instance, as arrow-root, or veal, or beef-tea, either of which will often re-

main on the stomach when most other articles of food or drink would be rejected.

In the treatment of many diseases you see physicians destroy pain by narcotics, and the question naturally suggests itself to you whether you may not sometimes venture, in the management of hydrocephalus, to mitigate by their means your patient's sufferings? The inquiry is one not very easy to reply to satisfactorily. I think, however, that there are two conditions under which you would be justified in trying the experiment of giving them. Sometimes the disease sets in with great excitement, and a condition closely resembling mania in the adult, symptoms which may have been ushered in by convulsions. In such a case, although the heat of head and the flush of the face may have disappeared after free depletion, and the copious action of purgative medicine, and though the pulse is feeble as well as frequent, yet the excitement may be scarcely if at all diminished. Here an opiate will sometimes give the relief which nothing else would procure; your patient will fall asleep and wake tranquillized in the course of two or three hours. In other cases which did not set in thus violently, restlessness, talkativeness, and a kind of half delirious consciousness of pain in the head become very distressing as the disease advances, being always aggravated at night, so that your patient's condition seems one of constant suffering. But he is not able to bear any more active treatment, and, indeed, you have already emptied your quiver of such weapons. Under these circumstances I have sometimes given a full dose of morphia, and have continued it every night for several nights together with manifest relief.

Another inquiry that you may put is, when are you to employ blisters? Certainly not at the beginning of the disease, when they would increase the general irritation, and do more harm than good. At a latter period they may be of service, when the excitement is about to yield to that stupor which usually precedes the state of complete coma. They should then be applied to the nape of the neck or to the vertex; and I am disposed to think the latter the better place, since, when applied to the nape of the neck, they often become displaced by that boring movement of the head which the child in many instances keeps up unconsciously. It is well, too, to remember that the skin in hydrocephalus is very inapt to vesicate, so that a blister will require to be kept on for 10 or 12 hours; contrary to what ought to be your usual practice with children. Cases enough are on record proving the utility of blisters thus applied, to render it your duty not to neglect this means.

Need I say that you must not think of treating a case of hydrocephalus throughout just in the same way as you did at its commencement. There is, if the disease do not run a very rapid course, a stage of weakness and exhaustion, often associated with a half comatose condition, though sometimes attended with a considerable degree of suffering, which frequently precedes the sign of approaching death. The bowels are now sometimes relaxed, though oftener they continue constipated, because the nervous energy which kept up the peristaltic movements of the intestines is worn out. The powers of organic, as well as those of animal, life are palsied. This is the time for the administration of quinine, for the employment of nutritious broths and jellies, and even of wine.

You may perhaps be disposed to ask me what I think of this remedy or the other, which has at different times been boasted of, as having done good when other means had failed. Now you must not infer from my silence that I do not believe that other medicines, besides those which I have spoken of, have been of service; but to attempt to canvass the respective merits of each would, I fear, be a tedious task, and one from which you would derive but little profit.

Besides, may I remind you of what Sydenham says, " * * * In eo præcipuè stat Medicina Practica, ut genuinas Indicationes expiscari valeamus, non ut remedia excogitemus quibus illis satisfieri possit; quod qui minùs observabant, Empiricos armis instruxere, quibus Medicorum opera imitari queant."

STATE OF THE BLOOD IN PHTHISIS TUBERCULOSA.

BECQUEREL and Rodier examined the serum in sixteen phthisical cases, but their researches have added little or nothing to our knowledge of the peculiarities of the blood in this disease. The serum is modified in its composition according to the general condition of the patient, and the complications which may be engrafted on the original disease. When an anæmic condition is developed, or when abundant hæmoptysis occurs, the solid constituents of the serum tend to diminish in quantity. The proportion of albumen is decidedly reduced, whilst that of extractive matters, fatty principles, and salts, is increased; so that it appears that the composition of the blood in pulmonary phthisis is very similar to that presented in the different phlegmasiæ."—*Dr. Day's Report on Chemistry*, 1847.

LECTURES ON NUTRITION, HYPERTROPHY, AND ATROPHY,

Delivered in the Theatre of the Royal College of Surgeons, May 1847,

By JAMES PAGET, Esq.

Professor of Anatomy and Surgery to the College.

[Reported by WILLIAM S. KIRKES, M.D.]

LECTURE IV.

Hypertrophy—its two kinds—the three principal conditions which give rise to it—cases and preparations illustrating the influence of these conditions—especially that of the increased flow of blood through a part—as shown in John Hunter's experiment of transplanting the spurs of cocks—and in the case of hypertrophied fingers.—Specimens exhibiting hypertrophy in the different tissues—hypertrophy of the bladder in consequence of obstructed flow of urine—Hunter's remarks—enlargement of intestinal canal above seat of obstruction.—Hypertrophy in consequence of the too irritable action of a muscle—as in the case of the bladders of some children—hypertrophy of muscle probably accomplished by enlargement of existing fibres, not by the addition of new ones.

Hypertrophy of Bone—usually the result of change in the parts in intimate relation with the bone.—Eccentric and concentric hypertrophy of the skull—the former frequently the result of hydrocephalus—the latter an accompaniment of atrophy of the brain—the excessive growth most manifest about the centres of ossification. Hypertrophy of other bones, as a morbid process, rare—instances of its occurrence in consequence of increased flow of blood through a bone, resulting from neighbouring disease—distinctions between the effects of such hypertrophy and the distortion of rickets—complications which may ensue from such forms of hypertrophy.

Specimens illustrating the effects of pressure according as it is from without or from within—or constant or occasional—constant pressure produces atrophy and absorption—occasional pressure, hypertrophy and thickening.—Presence of cutaneous structures in the contents of ovarian cysts—probable mode of origin of such cysts.

I PROPOSE to devote the present lecture to the more detailed consideration of Hypertrophy.

We have seen that there are two kinds of hypertrophy—that with increase or mere growth, and that with development. The distinction is, indeed, only for utility's sake, since generally, when a part grows, it becomes more robust or stronger, and, so far, may be said to be developed; and, on the other hand, a part is rarely, if ever, developed in circumstances of disease, without at the same time acquiring bulk. Still, we shall find the distinction as convenient in pathology as in physiology, in which it is certain that some obscurity has arisen through the neglect of the true distinction between the development and the growth of a part.

The conditions which give rise to hypertrophy are chiefly or only three, namely—

1. The increased exercise of a part in its healthy functions.

2. An increased afflux of healthy blood.

3. An increased accumulation in the blood of the particular materials which any part appropriates in its nutrition or in secretion.

Of hypertrophy as the consequence of the increased exercise of a part, I have already spoken generally, and we need no better examples of it than the muscles of a strong man's arm fitted for the very exercise in which they acquired bulk and power, or the great and robust heart of a man who has suffered some disease producing obstacle to the movement of the blood. Both alike are the results of vigorous healthy growth, brought about by exercise of the part in its proper function.

In a former lecture* I spoke of the increased growth of the kidney, and of the adipose tissue, when the constituents of urine or of fat exist in excess in the blood. To these I may refer again as examples of the third kind of hypertrophy; and I may illustrate one of them by this preparation of the urinary organs of an Argus Pheasant,† in which one kidney is very small, granular, and shrivelled, the other very large, and large, not by dilatation, but by growth of its natural texture,—growth accompanied with a more active discharge of its office, as elucidated by the proportionally great size of the renal artery.

In the last lecture,‡ also, I alluded to the increased flow of blood through a growing part as the consequence of the augmented nutritive process carried on in it; and I just mentioned, that although in most cases this increased circulation is the consequence of hypertrophy, yet there are cases in which the course of events is inverted. The increased flow of healthy blood through a part,

* Lecture II. MEDICAL GAZETTE, vol. xxxix. p. 1018.

† Prepar. 3. Pathological Museum of the College of Surgeons.

‡ MEDICAL GAZETTE, vol. xl. p. 57.

if it be not interfered with by local disease, will give rise to hypertrophy of the part, or, at least, of some of its tissues.

This specimen* shews the fact. Mr. Hunter described it as "a sore which had continued inflamed a long time, where the increased action had made the hair grow." The integuments, you see, for about an inch round the ulcer, where probably there was simply increased supply of blood, are covered with thick-set, long, and rather coarse, dark hairs: while on the more distant parts of the integuments, the hair is paler, more slender, and more widely scattered.

Similar examples of overgrowth of the hair through increased supply of blood, are not unfrequently seen near the ends of stumps which have remained long inflamed, and about old diseased joints,—not, indeed, at the very seat of inflammation, for there the process of organising, or otherwise changing, the morbid product, may interfere with or exclude all healthy growth,—but at some little distance from it, where the parts share the increased supply of blood, but not the disease of inflammation. I lately saw a very striking case of such growth of hair in the thigh of a child about five years old. The femur had been fractured near the middle: the case did not proceed favourably; and union was not accomplished without much distortion. When I saw the child, I was at once struck with a dark appearance on the thigh: it was all covered with dark hair, like that of a strong coarse-skinned man, and it had been darker, the mother said; yet, on the rest of the body, the hair had all the fineness and softness which are proper to it in early life.

Facts illustrative of these are presented by some cases of transplantation. When the spur of a cock, for example, is transplanted from the leg to the comb, which abounds in quickly moving blood, its growth is marvellously augmented, and it increases to such a long, strange-looking mass of horny matter as you see in these two preparations.† In one (No. 54) the spur has grown in a spiral fashion, till it is six inches long; in the other (No. 52) it is like a horn curved forwards and downwards, and its end needed to be often cut, to enable the bird to bring his beak to the ground in feeding, and to prevent injurious pressure on the side of the neck.‡

It is worth observing, that these excessive growths have taken place on the combs without any corresponding diminution in

the growth of the spurs in their proper places. The legs of these cocks are amply spurred, though the spur reproduced is not so long as that which had not been interfered with. In one instance, moreover,* there is an excessive production of the horny scales upon the legs, while the horny spur was also excessively growing on the comb.

I shall have occasion presently to mention cases which make it very probable that the more complex and vascular tissues, such as the muscles, integuments, and bones of a limb, can be thus hypertrophied by excess of blood. I will now only suggest the probability that the cases of congenital or spontaneous hypertrophy of a hand or a foot, or of one or more fingers, have their origin in some excessive formation of the vessels, permitting the blood to flow more abundantly through the part. Here are casts of such cases†; and, for the description of these, and of other similar examples, I refer you to a paper by Mr. Curling, in the 28th volume of the *Medico-Chirurgical Transactions*. An enlargement of the radial artery has been observed by Dr. John Reid in a case of such hypertrophy of the thumb and forefinger referred to by Mr. Curling‡; but there is no evidence to determine whether in this case the enlargement of the artery was previous or subsequent to the excessive growth of the part.

But whatever be the case in these instances of enlargement, the fact—which the others shew—that well-organized tissue, like hair and horn, is produced in consequence of simply increased supply of blood, stands in interesting contrast with the phenomena of inflammation, where no tissue, or only the most lowly organized, is ever formed. No fact can better shew how far the mere enlargement of the blood-vessels is from constituting the essential part of inflammation.

Let me now further illustrate the general physiology of Hypertrophy, by adducing some of the specimens in the Museum which exhibit it in the principal tissues.

The first specimen in the Pathological division of the Museum is an urinary bladder hypertrophied in consequence of stricture of the urethra. It affords an admirable instance of genuine unmixed hypertrophy; for every part of the bladder is grown large; it is not contracted as if it had been morbidly irritable; and its mucous membrane, without induration or any similar morbid change, is increased, apparently by simple growth, to

* No. 6 in the Pathological Museum of the College of Surgeons; described at page 5 of the Pathological Catalogue, vol. i.

† Nos. 52 and 54 in the Pathological Museum of the College of Surgeons.

‡ A further account of these preparations is given in vol. i. p. 25, of the Pathological Catalogue of the College Museum.

* No. 53 in the same collection.

† From the Museum of the College of Surgeons; others from the Museum of St. Bartholomew's Hospital, Casts, No. 142.

‡ L. c. page 343. Dr. J. Reid's account of this case may be found in the *Lond. and Edin. Monthly Jour. of Med. Sci.* 1843, p. 198.

a thickness proportionate to that of the muscular coat.

I adduce this especially as an example of hypertrophy of muscular tissue, concerning which, instead of adding to what was said in the last lecture, I will quote Mr. Hunter's account. Referring, perhaps, to this very specimen, he says, in a passage which I have inserted in the Catalogue: * "The bladder, in such cases [of obstruction to the passage of urine] having more to do than common, is almost in a constant state of irritation and action; by which, according to a property in all muscles, it becomes stronger and stronger in its muscular coats; and I suspect that this disposition to become stronger from repeated action is greater in the involuntary muscles than the voluntary; and the reason why it should be so is, I think, very evident: for in the involuntary muscles the power should be in all cases capable of overcoming the resistance, as the power is always performing some natural and necessary action; for whenever a disease produces an uncommon resistance in the involuntary parts, if the power is not proportionally increased, the disease becomes very formidable; whereas in the voluntary muscles there is not that necessity, because the will can stop whenever the muscles cannot follow; and if the will is so diseased as not to stop, the power in voluntary muscles should not increase in proportion."†

Nothing, surely, could more appositely, or more exactly, express the truth concerning hypertrophy of muscle; and it may be observed, from what he says in a note, that Mr. Hunter appears to have been the first who rightly apprehended the nature of this growth of the bladder. He says, "This appearance was long supposed to have arisen from a disease of this viscus; but, upon examination, I found that the muscular parts were sound and distinct, that they were only increased in bulk in proportion to the power they had to exert, and that it was not a consequence of inflammation, for in that case parts are blended into one indistinct mass."‡

What this specimen shows in the urinary bladder is an example of the change which ensues in all involuntary muscles under the same circumstances. They all grow and acquire strength for the new and extraordinary emergencies of their case. Thus, the œsophagus, the stomach, the intestinal canal, as often as any portion is the seat of stricture, display hypertrophy of the muscular coat above the stricture. The enormous enlargements of the intestinal canal

which gradually ensue above nearly impassable strictures of the rectum are not mere dilatations, but growths of the intestinal walls, the muscular coat augmenting in power to overcome, if it may, the increased hindrance to the propulsion of the contents, and even the glands and other textures of the mucous membrane simultaneously increasing. It was so in this large intestine of a child only five years old, in which contraction of the rectum occurred in consequence of the healing of a wound made by an enema-pipe, and for ten months fluid fecal matter gradually collected till it amounted to a pailful*.

In a great majority of cases the hypertrophy of muscles, whether voluntary or involuntary, is the consequence of an increased obstacle to their ordinary action. It may be a question whether it is ever engendered by an unhealthy action—as by spasm or convulsion—of a muscle; for, as a general rule, no morbid action in a part leads to any healthy process in it. Yet there are cases in which the too irritable action of a muscle appears to engender an hypertrophy of it. This is the case with the bladders of some children whom you may find suffering with frequent and very painful micturition, and nearly all the signs of calculus; but in whom no stone exists. The bladder in such children is found, after death, exceedingly hypertrophied, and there may appear no other disease whatever of the urinary organs. Dr. Goiding Bird† has shewn that phymosis, by obstructing the free exit of urine, may give rise to these signs and to extreme hypertrophy of the bladder; but in some cases it appears certain that hypertrophy may occur without either phymosis, calculus, stricture, or any similar obstruction. It was so in this case from the Museum of St. Bartholomew's Hospital:‡ the bladder of a child four years old, who had suffered intensely with signs of stone in the bladder, but in whom no stone existed, nor any disease of the urinary organs except this hypertrophy of the muscular coat of the bladder. An exactly similar case has been recently under Mr. Stanley's care, in which, after exceeding irritability of the bladder, the enlargement of its muscular coat appeared the only change.

In such cases it is possible that the too frequent action of the bladder, though irritable and unhealthy, may have given rise to hypertrophy of the fibres; but it is also

* For a further description of this preparation, and of another containing the rectum, uterus, and vagina of the same child, see the 1st vol. of the Catalogue of the Anatomical Museum of St. Bartholomew's Hospital, 16th Series, Nos. 93 and 94, p. 319. The canal of the rectum is reduced to an eighth of an inch in diameter.

† LONDON MEDICAL GAZETTE, vol.

‡ Series xxvii. No. 14: vide p. 383 of the Anatomical Catalogue.

* Vol. i. p. 2.

† Vide Mr. Palmer's edition of Hunter's Works, Vol. ii. p. 299.

‡ Loc. cit. p. 299: quoted in the Pathological Catalogue, Vol. i. p. 2.

not unlikely that the change may be due to narrowing of the urethra by muscular action. If, for example, the compressors of the urethra, instead of relaxing when the muscular coat of the bladder and the abdominal muscles are contracting, were to contract with them, the obstacle they would produce in the urethra would soon engender hypertrophy of the bladder.

Hunter, whose ingenuity was ever tempting on his intellect and industry, asked himself whether the hypertrophy of the heart were accomplished by the addition of new fibres, or by the enlargement of those that already exist. This question could hardly be determined without more microscopic aid than Hunter had at his command. But if we may believe (and there can be little doubt we may) that hypertrophy is, in this respect also, exactly similar to common growth, the question set by Hunter has been answered by Professor Harting, of Utrecht*. He has shown that in the growth of muscles there is no multiplication, no numerical increase, of the fibres, but an enlargement of them with addition to the number of the fibrils. I certainly do not see so great an enlargement of the fibres of the hypertrophied heart as there should be according to this account; yet the Professor has taken much pains to ascertain the fact, and is an accurate observer. So that I am disposed to rely on his description, and believe that the enlargement of a muscle (at least of one with transverse striæ) is due to the enlargement, without increased number, of the fibres; and that as each fibre enlarges, the number of its contained fibrils is augmented.

Hypertrophy of Bone presents itself in many interesting cases. It is usually a secondary process, one ensuing in consequence of change in some other part with which the bones are intimately connected. For, just as in their natural development and growth, the bones of the skull are formed in adaptation to the brain, and those of the limbs are framed to fitness for the action of the muscles; so in disease they submit in their nutrition to adapt themselves to the more active parts. Thus, the skull enlarges when its contents do; and the bones of the limbs strengthen themselves as the muscles implanted on them become stronger and more active; and they do this in adaptation to the force of the muscles, and not merely because of the movements they are subject to: for no extent or force of passive movement would prevent the bone of a limb whose muscles are paralysed from suffering atrophy.

In the skull, if in any organ, we might speak of two forms of hypertrophy: eccentric and concentric. When the cranial contents are enlarged, the skull enlarges with corresponding augmentation of its area; and when the cranial contents are diminished, the skull (at least in many cases) is hypertrophied with concentric growth and diminution of its capacity.

The first, or eccentric form, is usually the consequence of hydrocephalus; wherein, as the fluid collects and distends the dura mater, so the skull grows; still, as it were, striving to attain its purpose, and form a complete envelope for the expanding brain.

The process of enlargement in these cases is often one of simple growth, and that, indeed, to a less extent than it may seem at first sight: for it is very rarely that the due thickness of the skull is attained while its bones are engaged in the extension of their superficial area. Hence, the weight of an hydrocephalic skull is not much, if at all, greater than that of a healthy one; large, as is this parietal bone,* measuring nine inches diagonally, it weighs only four ounces, while the weight of an ordinary parietal bone is about three ounces.

It is interesting to observe in some of these cases, how the formative process, though thus thrown into straits and difficulties, yet obeys, both in growth and in development, the law of symmetry, as shown in the symmetrical placing of the Wormian bones, by which the extent of the skull is in some measure made up.

It would be yet more interesting if we could certainly trace here something of obedience to the law of unity of organic type, in the fact or the mode of insertion of these intercalary bones, as Müller has shown them to be, when compared with those of the cranial vertebræ of other animals, of which Professor Owen has been lately so ingeniously and instructively discoursing. It cannot be certainly done; and yet, in some of these specimens, there appears (as if in accordance with that law,) a tendency to the formation of the Wormian bones at the posterior part of the sagittal suture more than in any other part, as if in imitation of the interparietal bones of Rodents. And in this specimen,† in the midst of great confusion of the other bones, we have a remarkable bony arch, extending from between the two frontals to the occipital bone,—occupying, therefore, the place of a larger interparietal bone, and reminding us of the interparietal bones of some of the monkeys, e. g. *Cebus* and *Jacchus*. We have a somewhat corroborative specimen in

* *Recherches Micrométriques*, 4to. 1845. See Report on Anatomy and Physiology for 1844-5, in No. xliii. of the British and Foreign Medical Review.

* Prepar. 2, in the Pathological Museum of the College of Surgeons.

† From the Pathological Museum of the College of Surgeons.

the hydrocephalic skull of the skeleton from Mr. Liston's Museum, in which the interparietal Wormian bones are larger than any others.

The hypertrophy of the skull, which may be called concentric, is that which attends atrophy with shrinking of the brain, or, perhaps, any disease of the brain which is attended with diminution of its bulk. In such a case it usually happens, as was first shown by Dr. Sims, in a paper in the 19th Volume of the "*Medico-Chirurgical Transactions*,"* that the skull becomes very thick.

All the specimens which I have examined show, however, that in these cases the thickening of the skull is not, in itself, a morbid process; it manifests definite purpose; is usually effected by healthy growth; and observes the rules followed in the natural formation of the skull.

Thus, as in first formation, it exactly adapts itself to the form and size of the brain, or, rather, of its membranes; only now it does so without representing on its exterior the change which has taken place within. The thickening of the skull is effected by the gradual remodelling of the inner table and diploe of the bones of the vault; so that, although the exterior of the skull may retain its natural form and size, the inner table grows more and more inwards, as if sinking towards the retiring and shrinking brain; not thickening, but simply removing from the outer table, and leaving a wider space filled with healthy diploe.

Again, it is a fact of singular interest that this thickening, this hypertrophy of the skull, most commonly, if not always, takes place especially, and to a greater extent than elsewhere, in the parts of the bones at and about which ossification commenced in the foetal state: as if some of the potency that of old brought the foetal membrane of these parts first into the development of bone, were always afterwards concentrated in them; as if the reserve-power of growth had its seat in the same centres where was formerly the originative power of development. The fact is shown in many of these specimens;†—and we may find some further, though less sure evidence of the indwelling formative energy of these old centres, in the fact that those diseases of bone which are accompanied with excessive formation, such as morbid thickenings of the skull, and tumors, are, in a large majority of cases, seated in or near the centres of ossification,

—you rarely find them except at the articular ends, or round the middle of the shaft. The same does not hold of necrosis, rickets, ulceration, or other diseases indicative of depression of the formative power of the bone. Here are specimens of ricketty disease of the skull, and the femora,* which shew the centres of ossification remarkably exempt from the change of structure which has extensively affected the later-formed parts.

This abiding power of the centres of ossification is the more remarkable when we remember that, in many cases, the thickening of the skull takes place in persons far past the middle period of life; it may happen even in very old age, and may give one more evidence of that precision of assimilation which maintains, throughout life, characteristic distinctions among portions of what we call the same tissue.

Let me, however, remark, that it is not peculiar to old persons; I believe that at whatever age, after the complete closure of the cranial sutures, shrinking of the brain may happen, this hypertrophy of the skull may be its consequence. This (No. 379) is part of the skull of a suicide, only 30 years old: this also, (No. 380) from an idiotic woman, has not the characters of an old skull.†

I lately examined a remarkable case, showing the same conditions, in a person less than 30 years old, in whom the thickening of the skull must have begun in early life.

The case was that of a lady, of remarkable personal attractions, but of slenderly developed intellect, whose head did not, externally, appear below the average female size. Yet her cranial cavity was singularly contracted; the skull had adapted itself to an imperfectly-grown brain, by the hypertrophy of its diploe, which was nearly half an inch thick at and near the centres of ossification of the frontal and parietal bones.

I must present this specimen, however,‡ as evidence that this hypertrophy is not always the mode by which the skull is adapted to the diminished size of the brain. In congenital and very early atrophy of the brain, the skull is proportionally small, and may exactly represent the size and shape of the cerebrum. It does so in the cases of the idiots, which I exhibited in the first lecture;§ and it does so in this instance. The man from whom this skull was taken received a compound fracture of the left frontal bone when he was only 14 years old.

* "*On Hypertrophy and Atrophy of the Brain*," page 315.

† Exhibited from the Pathological Museum of the College of Surgeons, and from the Museum of St. Bartholomew's Hospital: of these preparations, Nos. 3234 and 3235, in the College Museum, are the most striking.

* Nos. 390, 391, and 392, in the Pathological Museum of the College of Surgeons.

† Both the above specimens were from the College Museum.

‡ From the Museum of St. Bartholomew's Hospital.

§ Vide Medical Gazette, vol. xxxix, page 931.

Portions of bone were removed, hernia cerebri ensued, and several pieces of brain were sliced off. But he recovered and lived 33 years; and Mr. Grayling, lately a very zealous student of St. Bartholomew's Hospital, procured his head. The left hemisphere of the cerebrum was altogether small. Where the brain had been sliced off, its surface had sunk in very deep, and had left a cavity filled with a vascular spongy substance containing ill-formed nerve-fibres. You will observe here, that in the modelling of the skull, the left side has become in every part less capacious than the right, adapting itself to the diminished brain without any hypertrophy of the bones.

The cases are very rare in which hypertrophy of any other bones than those of the skull occurs in connection with what is recognised as disease. For, as I have said, the bulk of most of the other bones is principally determined by the activity of the muscles fixed on them; and a morbidly excessive action of muscles, sufficiently continued to produce hypertrophy of bones, is seldom, if ever, met with.

But there is a condition of bones so similar to hypertrophy in many respects, and so little different from it in any, that I may well speak of it here; yet not without acknowledging that nearly all I know about it is derived from Mr. Stanley.

When any of the long bones of a person who has not yet attained full stature is the seat of disease attended with unnatural flow of blood in or near it, it may become longer than the other or more healthy bone. For example, a lad has necrosis of the femur, it may be of a small portion of it, and he may recover completely from this disease; but for all his life afterwards (as I had constant opportunity, once, of observing in a near relative), he may be lame, and the character of his lameness will show very plainly that the limb which was diseased is now too long; so that he is obliged, in walking, to lift the lame leg, almost like a hemiplegic man, lest his toe should trip upon the ground.

Such cases are not uncommon: I once saw, with Mr. Stanley, a member of our profession, in whom this elongation of one femur had taken place to such an extent that he was obliged to wear a very high shoe on the other, that is, the healthy, limb. And this, which he had adapted for himself, affords the only remedy for the inequality of limbs. Nor is the remedy unimportant: for, to say nothing of the unsightly lameness which it produces, the morbid elongation of the limb is apt to be soon complicated by one of two serious consequences. Either the patient, in his endeavours to support himself steadily and upright, will ac-

quire first the habit, and then the malformation, of talipes of the healthy limb: or else, through the habit of always resting on the short, healthy, and stronger limb, he will have lateral curvature of the spine. Cases of both these kinds have occurred in Mr. Stanley's practice; being brought to him for the remedy, not of the elongated femur, for that had been unnoticed, but of the consequent deformity of the foot or the spine.

A considerable elongation of the lower extremity almost always depends on the femur being thus affected: another, and very characteristic result, ensues from the same kind of hypertrophy when it occurs in the tibia. The femur can grow longer without materially altering its shape or direction, but the tibia is tied by ligaments at its two ends to the fibula; so that when it lengthens, unless the fibula should lengthen to the same extent, it, the tibia, must curve; in no other way, except by the lengthening of the ligaments, which, I believe, never happens to any considerable extent, is elongation of the tibia possible.

Tibiae thus curved are far from rare; specimens are to be found in nearly every museum: yet I know of none in which the pathology of the disease is clearly shown, except this from the museum of Saint Bartholomew's Hospital:* for here, alone, the fibula, and the healthy tibia of the opposite, limb are preserved with the diseased and elongated tibia. The anterior wall of this diseased tibia, measuring it over its curve, is more than two inches longer than that of the healthy one: the posterior wall is not quite so long.

Here are other specimens, in all of which you observe the characteristic form of the curve, and its distinction from the curvature of rickets. The distinction is established by these particulars: the ricketty tibia is always short: the other is never short, and may be longer than is natural. In the ricketty one the articular ends always enlarge very suddenly, for the shortening is due to the imperfect formation of the ends of the shaft: in the elongated tibia, there is usually even less contrast of size between the shaft and epiphyses than is natural, because the elongation of the shaft is commonly attended with some increase of its circumference. But, especially, the ricketty tibia is compressed, usually curved inwards, its shaft is flattened laterally, and its margins are narrow and spinous; while in the elongated tibia the curve is usually directed forwards, the margins are broad and round, its surfaces are convex, and the compression or flattening, if there be any, is from before backwards.

* Series 1. Subseries A. No. 46.

The elongation of the bones in these cases may occur, in different instances, in two ways. In some cases it seems due to that change in bone which is analogous to chronic inflammation of soft parts; and which consists in the deposit of the products of inflammation in the interspaces of the osseous tissue, their accumulation therein, and the remodelling of the bone around them as they accumulate. Such a change appears to have occurred in this specimen from St. Bartholomew's [the tibia previously described]; and would, necessarily, in a growing bone, give rise, as it does in soft parts, to enlargement in every direction, to elongation as well as increase of circumference.

But in other cases the elongation is probably due to the more genuine hypertrophy which follows the increased flow of blood. When, for example, a small portion of bone, as in circumscribed necrosis, is actively diseased, all the adjacent part is more vascular; hence may arise a genuine hypertrophy, such as I have shown in hair under similar circumstances. Or, when an ulcer of the integuments has long existed in a young person, the subjacent bone may share in the increased afflux of blood, and may enlarge and elongate. Even, it appears, when one bone is diseased, another in the same limb may thus be increased in length. A remarkable instance of this kind has lately been observed by Mr. Holden, in a young man, who, in childhood, had necrosis of the left tibia, one of the consequences of which was defective growth of the left leg, with shortening to the extent of more than an inch. Yet the whole limb is not shorter than the other; for, without any apparent morbid change of texture, the femur of the same side has grown so as to compensate for the shortening of the tibia.

I must not forget to say, that the interest of these cases of inequality of the limbs by lengthening of one of the bones, is increased by comparison with another class of cases, in which as great or greater inequality of length depends on one limb being anormally short. In these, the short limb has been the seat of atrophy, through paralysis of the muscles dependent on some of the very numerous conditions in which they may be rendered inactive. The complication of the cases, the talipes, and the curvatures of the spine, depending, as they do, on the inequality of the length of the limbs, from whatever cause arising, will be alike in both; and much care may be needed in diagnosis, to tell which of the limbs, the long one or the short one, is in error. The best characters probably are, that when a limb is, through disease or atrophy, too short, it will be found, in comparison with the other, defective in circumference as well as in length; its muscles, partaking of the atrophy, will

be weak and flabby, and all its tissues will bear signs of imperfect nutrition. If none of these characters be found in the short limb the long one may be suspected, and this suspicion will be confirmed, if there be found in it the signs of increased nutrition—enlargement, growth of hair, and the rest; or if, in the history of the case, there be evidence of a disease attended with an excess in the supply of blood.

Continuing to select from the Museum only such examples of hypertrophy as may illustrate its general pathology, I pass over many, and take next, those which display the formation of corns—a subject which, while Hunter deemed it worth consideration, we shall not be degraded by discussing. He made many preparations of corns, to show not only the thickening of the cuticle, but the formation of the little sac of fluid, or bursa, between the thickened cuticle and the subjacent articulation. His design appears to have been, mainly, to illustrate the different results of pressure—to show how that which is from without, produces thickening: that from within, thinning and absorption of parts. He says, having regard to these specimens, "The cuticle admits of being thickened from pressure in all parts of the body: hence we find that on the soles of the feet of those who walk much the cuticle becomes very thick; also on the hands of labouring men. We find this wherever there is pressure, as on the elbow, upper part of the little toe, ball of the great toe, &c. The immediate and first cause of this thickening would appear to be the stimulus of necessity given to the cutis by this pressure, the effect of which is an increase of the cuticle to defend the cutis underneath. Not only the cuticle thickens, but the parts underneath, and a sacculus is often formed at the root of the great toe, between the cutis and ligaments of the joint, arising from the same cause to guard the ligaments below."*

In another place, he says, "When, from without, pressure rather stimulates than irritates, it shall give signs of strength, and produce an increase of thickening: but, when from within, the same quantity of pressure will produce waste [see, for illustrations of this, preparations No. 120 and 121 in the Pathological Museum]; for the first effect of the pressure from without is the disposition to thicken, which is rather an operation of strength; but if it exceeds the stimulus of thickening, then the pressure becomes an irritator, and the power appears to give way to it, and absorption of the parts pressed takes place, so that nature very readily takes on those steps which are

* Mr. Palmer's edition of Hunter's Works, vol. i. page 560; quoted in the Pathological Catalogue of the College Museum, vol. i. p. 4—5.

to get rid of an extraneous body, but appears not only not ready to let extraneous bodies enter the body, but endeavours to exclude them by increasing the thickness of the parts."^{*}

It is evident from these passages that Mr. Hunter was aware that pressure from without might produce atrophy; though he may appear to favour the belief, which, I think, is commonly adopted as on his authority, that the direction of the pressure is that which determines its result. Really, the result seems to depend more on whether the pressure be occasional or constant. Constant extra-pressure on a part always appears to produce atrophy and absorption; occasional pressure may, and usually does, produce hypertrophy and thickening. All the thickenings of the cuticle are the consequences of occasional pressure,—as the pressure of shoes in occasional walking, tools occasionally used with the hand, and the like: for it seems a necessary condition for hypertrophy, in most parts, that they should enjoy intervals in which their nutrition may go on actively. But constant pressure, whether from within or from without, always appears to produce absorption: and there are here many interesting examples of its effects.

These vertebræ† illustrate very well the results of pressure by aneurisms and tumors. So far as themselves are concerned, the pressure of the aneurism was from without inwards; yet they are atrophied,—not ulcerated, but hollowed out, and remodelled in adaptation to the shape of the aneurismal sac.‡

So, also, the pressure of this loose mass of bone in the knee-joint§ was from without inwards; but its result was atrophy,—the formation of a deep pit at the lower end of the femur, in which it lay safely and almost tightly lodged.

Again, we have here one of the cases in which one of the lower incisor teeth of a rodent animal has continued its growth after the loss of the corresponding upper incisor; and, being no longer worn down by attrition in growing, has achieved a most unnatural length. It shows very well the consequences of constant pressure; for its extremity, turning round so as to form nearly a complete circle, has come into contact with the side of the lower jaw, and

(like, as they tell, the Fakir's finger-nails growing through the thickness of his clenched hand) it has perforated the whole thickness of the jaw,—the absorption consequent on its pressure making way for its onward course.*

Here [showing the base of a skull] is, perhaps, a stranger case still. It was taken from the body of a woman in the dissecting-room of St. Bartholomew's Hospital, and tells itself all the history that can, or perhaps need be given. She had an aperture in the hard palate, and for remedy of its annoyance, used to wear a bung, or cork, in it. But the constant pressure of so rough an obturator, produced absorption of the edges of the opening, making it constantly larger, and requiring that the cork should be often wound round with tape to fit the widening gap. And thus the remedy went on increasing the disease, till, of all the palatine portions of the upper maxillary and palate bones, nothing but their margin or outer shell remains: the rest is all absorbed.†

Lastly, let me show this as an instance in which, in the same part, permanent pressure produced atrophy, and occasional pressure hypertrophy. It is a Chinese woman's foot:‡ the bandaging, and constant compression in early life, produced this diminished growth; but afterwards, when, with all the miserable doublings up and crowding of the toes, it was used in walking, the parts of pressure became all seats of corns.

These examples, then, may suffice to show what I have said—that constant pressure on a part produces absorption: occasional pressure (especially if combined with friction) produces thickening or hypertrophy: and these, whatever be the direction of the pressure. And yet, let me add, that Mr. Hunter was not far wrong—he never was; for nearly all pressures from without are occasional and intermittent, and nearly all pressures from within, arising, as they do, from the growth of tumors, the enlargement of abscesses, and the like, are constant.

I will conclude this subject by showing some specimens, which have, perhaps, little direct communication with hypertrophy, yet may, in some measure, illustrate it.

We have seen that the tissues produced in hypertrophy are always those properly be-

* Hunter's Works, vol. 3, page 466. *Pathological Catalogue*, page 4.

† From the College Museum, No. 121A.

‡ A further description of these vertebræ may be found at page 53 of the *Pathological Catalogue of the College Museum*, vol. i. In proof that the hollowing out which these bones present is not the result of ulcerative absorption, their cancellous tissue is not exposed; being covered by a complete thin external layer of compact tissue.

§ Prepar. 965, in the College Museum.

* The specimen was exhibited from the Physiological Museum of the College of Surgeons.

† "The antrum is on both sides obliterated by the apposition of its walls, its inner wall having probably been pushed outwards as the plug was enlarged to fit the enlarging aperture in the palate. Nearly the whole of the vomer also has been destroyed, and the superior ethmoidal cells are laid open."—*Catalogue of the Anat. Mus. of St. Bartholomew's Hospital*, page 51, No. 232.

‡ From the Museum of St. Bartholomew's Hospital.

onging to the part, or are healthy perfect tissues, however highly organised the part enlarged may be. And this at once distinguishes them from the direct products of a morbid process, for a highly organised tissue is very rarely, indeed, formed in a diseased process. Such an instance, however, I have now to mention; and in this a tissue is produced by disease, which appears to be even more highly organised, and is of more complex structure, than that in which it is formed.

The case I refer to is that of ovarian cysts. These, you know, often contain fatty matter or tissue, hair and teeth, and other organised structures, either attached to thin walls, as if growing from them, or lying loose in their cavities. But, till Dr. Köhler^{*} examined them with the microscope, it was not, I think, known that the fat and hair are produced in a truly cutaneous structure growing on the inner surface of the cyst. In this, and in other specimens, I have had opportunity of verifying his observations, and of finding, as he describes, that (as in the diagram) the prominent substance in which the hair grows is really a piece of skin, having a well organised, tough, and thin layer, like the firm outer layer of cutis; that this rests on true adipose tissue, arranged like the sub-cutaneous fat of the common integument; and that the cutis thus formed is covered by well-organised epidermis, and contains embedded in it hair-follicles and sebaceous glands as well formed as on the proper integument. He adds, that it also contains sweat glands: but these I have not seen.

This specimen existed in part of a very large multilocular cyst, the other divisions of which contained some fatty matter and loose hair; others, various fluids: others, secondary and tertiary cysts. And this is commonly the case; the cysts are so large when they come to be examined, that we cannot tell their origin.

But here is one, a virgin ovary, with a cyst, the small size of which, as well as the structure of its walls, and the mode in which they are connected with the surrounding substance of the ovary, leave no doubt that it is a simply enlarged Graafian vesicle. Yet it contains a small mass of fat, exactly resembling the subcutaneous fat, with its tough fibro-cellular partitions.

So, then, we may conclude concerning these cysts, that they are Graafian vesicles, enlarged and diseased, and yet retaining that

marvellous formative energy which, even independent of impregnation, and under only morbid excitement, can produce in them well-formed tissues, which may bring to perfection growths imbedded in them.

Original Communications.

THE SCOTCH EPIDEMIC FEVER OF 1843-4.

BY JOHN RICHARD WARDELL, M.D. Ed.
Late President of the Royal Physical and
Hunterian Medical Societies,
Edinburgh; &c. &c.

[Continued from p. 549 of last volume.]

CASE XI.—*On dissection, no lesion to account for death.*

Mrs. M'Powrie, æt. 50, married: from 50, Blackfriars Wynd; accommodation pretty good. Admitted Sept. 25th, 1843.

Has for some years past been of intemperate habits; volume of flesh rather spare; colour of skin natural; countenance febrile-looking, and eyes slightly suffused. About three weeks previous to admission, was somewhat indisposed for a few days, but subsequently recovered. On the 16th inst. was taken ill with general muscular pains, headache, shiverings, sickness, &c., which were followed by floodings and slight sweating. Since that time has continued to experience a continuance of her pains. Cause assigned was contagion. On entering the hospital, the symptoms were as follows:—Pulse 60, of moderate strength, and regular; tongue covered with a whitish fur; bowels opened by medicine; temperature natural; no exhalation nor cutaneous eruption; slept well the previous night from a dose of muriate of morphia. In the morning the headache had greatly subsided, and the intellect was clear and collected. Still complains of great pain, and muscular power much enfeebled. Has some abdominal and epigastric tenderness upon pressure.—Mist. Salin. Diaph. ʒviii.; Cap. ʒj. 4ta q. q. horâ.

26th.—Pulse 80; temperature moderate; epigastric tenderness still considerable; complains of general pains and headache.

27th.—Much the same to-day.

* Müller's Archiv, 1843, page 365.

† Prepar. 164A, in the College Museum: described at page 69 of the Pathological Catalogue, vol. 1. Other portions of the same cyst are preserved in preparations 165A and 165B.

‡ From the Pathological Museum of the College of Surgeons.

28th.—Passed a tolerably easy night; bowels open; no sweating; still has pains, and is much debilitated; tongue brown and inclined to dryness; pulse 100; skin hot; epigastric tenderness considerable. Ordered the following:—*R*. Vini Ipecac., Vini Ant. Tart. aa. ʒij.; Sol. Mur. Morph. ʒiss.; Aquæ ʒij. Sit. Mist. cap. statim. quart. partem et rep. omni quarta hora.

29th.—Yesterday evening, 7 o'clock, she very suddenly sunk into an exhausted condition, being unable to move as previously; at the same time the surface (especially on the lower extremities) became cold; pulse 100, extremely weak. Wine was immediately administered, half an ounce being given every half hour. At midnight, little or no improvement having taken place, the quantity was increased, and some whiskey given. At 5 o'clock in the morning the pulse was found improved, and the skin had become generally warmer and more natural. She had now taken eight ounces of wine and one of whiskey. The mixture was omitted last evening. Was restless this morning, being wandering and uncollected; tried several times to get out of bed. She now (visit at noon) lies on her side in a dull and exhausted condition, moaning occasionally as if expressive of pain; slumbers a little, but is easily awake, and answers any question collected and rationally; pupils natural; tongue moist, dark in the centre; temperature moderate, but inclined to be chilly; pulse 122, soft, but of rather better strength than last night. There are, irregularly scattered over the body, dark, circumscribed, persistent patches. Wine to be continued.

30th.—Restless last night, when *gt. xxx*. Sol. Mur. Morph. were given, after which she slept until 3 A.M. Had no wine during that time; afterwards the stimulants were regularly given. Bowels opened by an injection this morning. She now lies in an exhausted condition, with the eyes half open, and apparently in a distressed state, being somewhat restless, moans, and the trachial râle is heard; gives some utterance in indistinct and inarticulate muttering. Is roused with difficulty, but appears to understand what is said, answering simple questions, though with exertion, then she soon relapses into her wonted state of

dejection; eyes clear; pupils natural, but somewhat fixed, and there is a good deal of ramiform injection of conjunctiva. Protrudes the tongue readily, which is thickly coated with a yellowish fur, but moist. Temperature of surface elevated; hands and feet cold; pulse 120, compressible.—*R*. Sol. Mur. Morph. ʒij.; Mist. Camph. ʒvi.; Sit. Mist. Cap. ʒj. 4ta q. q. hora. Hot bottles to be applied to the feet.

Oct. 1.—Continued to sink, and died last night.

Sectio Cadaveris.

Head.—Brain presents much about the natural appearance; no effusion into the ventricles, nor any softening or injection.

Thorax.—Lungs much loaded, yielding, on pressure, a copious flow of frothy serum, mixed with blood; crepitation pretty generally; both lungs are attached by old adhesions to the pleura costalis, especially the right lobe, which was very voluminous. Heart natural.

Abdomen.—Liver healthy, weighs 2 lb. 6 oz.; bile thin. Spleen rather soft, somewhat congested; weighs 6 oz.; otherwise of natural appearance. Kidneys, stomach, intestines, and other parts, quite healthy.

REMARKS.—This woman's case affords a good example of what we occasionally see in fever, viz. a gradual and irremediable declension of vital power; a sinking of nature which no efforts can obviate. The sudden manner in which she lapsed into a state of exhaustion, as well as the symptoms which then were ushered in, suggest that the brain was the seat of lesion; the post-mortem appearances, however, gave no acknowledged evidence as to the true cause of death. A sudden sinking of this description occasionally occurs in fever patients, after the disease has reached its acme, and all danger seems past. Two instances I particularly remember of what is now stated. These were in the persons of two females under the care of the late Dr. Graham. They came into the hospital in the epidemic fever, and passed through the disease in the ordinary manner, and had so far improved as to be placed upon a better diet. They both died suddenly during the night, sinking as if from a general

failure of action in the vital organs, nor did the inspections throw any light upon the real cause of such unexpected terminations. In convalescents from typhus I have known the same occur, and Dr. Graham then informed me that, during the many years of his practice, he could call to mind many similar instances in which fever patients had died in this unaccountable manner.

XIII.—Muscular and arthritic pains were exceedingly common during convalescence.

The brief observations to be made upon this head might, perhaps, with more propriety, have been placed under the sequelæ, but as the pains in question were experienced during the febrile paroxysm, as well as in convalescence, and as this peculiarity formed a striking feature in the pathology, the fact is here noticed. At the first the affection was attributed to changes of temperature or peculiarities in the weather, but as the patients complained the same of those pains when they had not been removed into another ward, at all seasons and under all varieties of the atmosphere, it was obvious that the cause was referrible to the disease, and not to extrinsic influences. Sometimes the larger joints, especially the knees and elbows, were so considerably affected, and the muscular pains so severe, as to demand a somewhat active treatment; in the generality of cases, however, these pains called for little if any remedial measures, and as the patient recovered his strength they gradually decreased. When complained of during the paroxysm of the fever the severer cases seemed to resemble acute rheumatism, but the redness and swelling so common in rheumatic fever were not present. Dr. Walsh, in his work previously alluded to, notices the same fact as being common in the epidemic of 1817-20. "A very common symptom," says that author, "occurring sometimes in the disease, but oftener during convalescence, was rheumatic pains of the joints, which occasioned considerable annoyance to the patients, and was removed with difficulty."* Dr. Cormack says that he "found arthritic and general pains in jaundiced

cases most severe, an observation worth regarding, from the connexion which subsists between jaundice and rheumatism, as has been particularly adverted to by Dr. Graves." Gillkrist, Moreno, and certain other writers on the yellow fever, mention pains of a similar description taking place in patients labouring under, and recently passed through, that disease. Probably the most plausible supposition respecting the cause of these pains would be to refer them to an iniquated state of the blood, arising from impairment of function in the renal and sudoriparous organs, thus vitiating the vital fluid by the non-removal of these noxious particles from the circulation, which are produced from the nitrogenised effete matters, so abundantly evolved during the progress of fever, as before mentioned, and which during health are conveyed from the system by their natural excretory channels. In Table No. VI., out of 450 cases, 375, being 1 in 1.2, or 5 cases out of 6, had those pains during the febrile paroxysm or convalescence, but most especially in the latter. In Table No. VII. out of 40 cases, 23 or 1 in 1.73 were thus affected; and in Table No. VIII. out of 80 cases, 40, or 1 in 2, had the same during convalescence.

XIV.—A peculiar form of ophthalmitis not unfrequently supervened during convalescence. (SEE SEQUELÆ.)

XV.—The mortality was very small.

The mortalities of fever vary according to the particular type of the epidemic, the season of the year, the class of people with whom it is chiefly restricted, together with innumerable other moral and physical influences by which the results are importantly modified. In the pestiferous localities of cities and large towns, where the lower orders are, from a multitude of circumstances, particularly prone to disease, there the deaths are always greater, notwithstanding the essential characters of the distemper being identically the same. This fact has long been particularly noticed in Edinburgh, where epidemic visitations of fever, from time immemorial, have been so common, and where there is such a manifest difference between the wretched poor of the old town and the respectable inhabitants of the new. In

* Walsh, On Bloodletting in Fever, p. 18.

Glasgow, Dundee, and other places, the same observation might with equal aptness be applied, and it is deeply to be regretted that such an infinitude of circumstances are in operation in the large towns of Scotland, which not only propagate disease, but fearfully swell the bills of mortality. The average mortality of the epidemic of 1817-20 was 1 in 25 or 30; in that of 1826-7, 1 in 10·33; in 1837, 1 in 10; and in that of 1838 it was so high as 1 in 6·27. All these visitations, except the former, were of a strictly typhoid nature. In the yellow fever, to which disease some physicians said the epidemic of 1843-44 bore a great resemblance, or was a modification of, the mortality is sometimes so frightfully high that the recoveries form but mere fractional exceptions. At Barcelona, in 1821, nineteen out of twenty perished, and at Murcia in 1804, out of 134 cases there treated, not more than three or four recovered; and in this appalling affection it has often happened that two-thirds of those who took it have been swept off! From the great difference which there is in this respect alone between the Scotch and true yellow fever, it is impossible to conclude that the former was in its essential nature like the latter. In the seven days' fever, according to the tabular forms which have been given, the average was 1 in 20. Dr. Cormack's cases averaged 1 in 16½.

Post-mortem appearances.—The essential nature of fever, as hath been previously observed, still being involved in much obscurity, every means whereby correct conclusions are likely to be arrived at should be carefully pursued; and none, perhaps, are so well calculated to ensure this desideratum as a diligent observance of the lesions discoverable after death. These lesions, however, are frequently so various in their character, so differently located, of all degrees of intensity, and sometimes even seem not at all to exist, or where they do, appear unimportant, and not calculated to arrest the natural actions of the vital organs; or it may be, are not cognizable in the present state of our knowledge: hence it is that the study of morbid parts in fever has not been attended with those satisfactory results which have proceeded from this mode of investigation relative

to other diseases. It is before stated, that, whatever the fundamental nature of fever may be, it has a particular proneness during its course to institute the inflammatory state; this, it is most probable, depending upon an impairment in the nervous and organic nervous influence proper to those parts in which the inflammatory process is discovered, which, by producing derangement in the circulatory function, would be followed by the sequent train of inflammatory phenomena: hence, as before insisted, the lesions to be witnessed in fever are rather to be regarded as complications or results of a primary morbid state, than conditions constituting a first cause to the symptoms manifested. In different countries the fever of the continued form now in question presents lesions in certain parts more than others; and different epidemics, even in the same locality, rarely, if ever, are marked by precisely similar post-mortem appearances—a circumstance which, amid other considerations, argues in favour of the supposition, that the specific poisons essentially vary.

The deaths which occurred in the seven days' fever were by far most frequent in those instances of jaundiced complication; nevertheless many cases of inspection were to be noticed in which discoloration of the surface very slightly or not at all existed. The following description, which is a generalization deduced from a number of cases, most particularly applies to those instances in which the biliary secretion was deranged, and which constituted the most severe form of the disease.

External aspect.—The yellowness of the surface was sometimes of a very deep tincture, and always became more intense after death; the face, neck, chest, and abdomen, were most highly coloured, and the conjunctivæ in the worst cases was of a saffron yellow. The penis, scrotum, pinna of the ear, and some of the flexures of the body, occasionally presented dark, purplish-brown, ecchymosed-looking patches. In certain instances where blisters had been applied, the vesicated part exhibited a deep mahogany colour, the circumscription of which was clear and well defined. The livid patches referred to seemed rather to be the result of capillary exudation than that of

speedy decomposition, as the bodies did not appear to decompose earlier in this than in typhus fever. *Brain*.—The encephaloid mass did not, as a general rule, manifest any marked appearance beyond what is seen in the kinds of fever with which we are more familiar: this of course varied according to the degree of active cerebral affection during life; and in certain cases there were the obvious traces of acute disease. The dura mater was scarcely at any time affected. Often an unimportant quantity of serous effusion was discovered beneath the arachnoid, as well as the yellowish-grey pustular-looking depositions of lymph so commonly noticed under this membrane in cases of fever. Sometimes the sub-arachnoid fluid was of an opaque milky-looking character. The centrum ovale was not more than usually studded with bloody puncta. The serum found in the ventricular cavities of the organ varied from a couple of drachms to two or three ounces, was of a slight straw colour when abundantly present, and in some instances, on being analyzed, presented the crystals of urea. *Lungs*.—These organs were less frequently found diseased than in typhus, and such lesion as existed was mostly of a bronchial character, as evinced by an increase of secretion and a vascular condition of the lining of the tubes. With regard to the *heart*, no states meriting notice were apparent. The *pharynx* and *oesophagus* were generally natural, without any epithelial excoriation, as spoken of with regard to these organs in yellow fever. Where there had been grumous vomiting, these parts were more or less besmeared with the dark matters similar to those found in the stomach and duodenum. The lining membrane of the *stomach* at times showed ecchymosed-looking patches, varying from an inch or two inches in diameter to the half of its internal surface. Adherent to the rugæ might be seen a glistening gelatinous-like substance, and it appeared as partly consisting of exuded blood. Where these patches were present, the membrane by which they were covered more readily broke beneath the fingers than it did in other places; and the submucous tissue, when carefully examined, exhibited the coagulæ of extravasated blood. Ulceration was of

very rare occurrence. The cavity of the organ sometimes contained a dark grumous matter, very similar to that ejected in black vomit of yellow fever. These instances were, however, only in some cases noticed, and the dark bilious-looking fluid was much more frequently observed. The *duodenum* was often preternaturally vascular, but Brunner's glands very seldom ulcerated, and its contents were of a viscid bilious secretion, or matter similar to that to be seen in the stomach. With the exception of some degree of injection, the *jejunum* was unaltered. The *ileum* in many cases I carefully examined through the whole extent of its internal surface, and especially towards the cæcal extremity, and around the ileo-cæcal valve, where the glands are frequently found in an ulcerous state in ordinary typhus, but in scarcely any or no instances was ulceration there found in this fever. This morbid condition, so much spoken of by the French pathologists, and named by Bretonneau "dothinerterite," was not a lesion at all common in the fever of 1843-44. M. Louis regards a disorganization of Peyer's glands as constituting the true pathology of certain types of fever, a doctrine which has made some progress in France, but only by some authorities subscribed to here. Andral has shown that the ileum and cæcum are far more prone than the other bowels to be thus affected. Out of 92 cases given by Andral, the lower third of the ileum was ulcerated in 38 instances, and the cæcum in 15. Occasionally some degree of vascularity, it is most probable chiefly depending upon the irritative properties of the bile, was noticed. There might also at times be observed some dark, brownish-looking patches, closely resembling the discoloration spoken of with regard to the villi of the stomach, and the mucous membrane corresponding with these stains readily gave way beneath the fingers. The submucous cellular tissue there contained extravasated blood. Dr. Cormack, in his dissections, particularly noticed this fact. Examinations made on the bodies of patients who were in the hospitals at the time of the epidemic, and died of genuine typhus, very frequently showed ulceration of the lower bowels, and up to the time of the commencement

of the epidemic (1842) the lesion in question was very much more frequently met with; but then the type of fever at that time prevalent was strictly typhoid, and consequently very different to the seven days' fever. What has been said with regard to the ileum may in a great measure be applied to the *cæcum*, as this organ presented no marked characters beyond what is related of the former. The *colon* was often injected, and sometimes presented the dark ecchymosed-looking patches above described. The solitary glands did not become disorganised. In no inspection which came under my own observation did the *rectum* manifest any very distinctive character, but Dr. Cormack, in two or three instances, discovered it intensely injected, with submucous extravasation of blood. From what has now been said relative to the digestive surface, in this form of fever, it is evident that there was a far less tendency to glandular ulceration than in typhus, which was the description of fever that had for many years previously prevailed in the large towns of Scotland, and even in protracted cases, where the patient had relapses, and thus some time subjected to the operation of disease, the lesion was scarcely at all observed. A general state of congestion, it is shewn, was the most marked appearance. From the accounts given by various authors respecting the yellow fever, it appears that in that disease intestinal ulceration is of unusual occurrence. No organ was perhaps so very generally affected as the *liver*, and even in those cases in which yellowness was not present, and where there was little room for supposing that disease there existed, inspection demonstrated preternatural congestion. The serous covering very seldom bore any traces of inflammatory action, whilst the parenchymatous structure was mostly in a turgid condition. On making a free section the larger vessels were engorged with dark blood, which would slowly ooze from the divided surfaces, and a deep-olive yellowish viscid secretion might also be seen in unusual abundance. The colour of the organ varied, sometimes being of a dark reddish brown or of a paler hue; the former, however, was the most frequent. The *gall-bladder*, in every inspection which came under

my own notice, was preternaturally distended with a dark bile, although the cystic duct was always pervious, and the reports of others who had witnessed autopsies bore testimony to the same. The bile in some cases was so much inspissated and very tenacious, that, by means of a dissecting knife, it could be raised in a ductile string to the height of three or four feet, or, if spread out, presented all the appearance of a coherent membranous substance. There were few inspections in which the *spleen* was found perfectly natural, it being well nigh always in a greater or less degree congested, and sometimes so much so as to be four or five times its normal size. The capsule did not become inflamed, but the parenchymatous part was often found in such a state of disease as to readily break beneath the fingers, whilst its consistency might sometimes be termed diffident, and the semifluid bloody matter had a jam-like appearance. I did not see any autopsy in which the organ had gone into the suppurative state. One case which is now distinctly remembered, on making a section of the organ, the divided surfaces exhibited a number of yellowish white spots, varying from the size of a millet seed to that of a No. 4 shot. My friend Dr. Renaud, now of Manchester, kindly subjected some of those deposits to the field of the microscope, and discovered them to be composed of pus-globules. The organs which were next most frequently congested were the *kidneys*, and minute examination showed the Malpighian and portal plexuses to be engorged with blood, which, on a section being made, imparted a mottled appearance. As in all descriptions of fever, the *blood* underwent certain morbid changes, and it is fully evident that one, and perhaps the most important of such changes, was a diminution of fibrin; hence the tendency which there was to capillary exudation and petechial extravasation. On being drawn from the veins it was of a less formative consistence than natural, and Dr. Cormack says that the "crassamentum was a spongy mass, instead of a firm fibrinous clot." That author also says that the microscope revealed lesion, as evinced by the presence of pus-globules, and in addition that the globules were found serrated

and notched. From inquiries made personally of Professor Allen Thompson, who instituted the researches, it appears that there must have been some misunderstanding on the part of Dr. Cormack, as the former did not corroborate the statement which is made by the latter in his work. Pus globules certainly did not exist in the blood. In order to be fully satisfied on this point, I procured the blood of a number of patients in different stages of the disease, which my friend and late teacher Dr. Hughes Bennett (whose histological acquirements, especially with regard to morbid anatomy, are well known to the profession), had the kindness to carefully examine, and this gentleman assured me that no pus-globules existed, nor yet the serrated and notched appearance as reported to have been observed by Professor Thompson. Dr. Bennett also informed me that, some time ago, being anxious to discover, if possible, in what the lesion of the blood in fever really consisted, he with great care examined the vital fluid in a hundred cases of typhus, in different durations of the disease and under various complications, but did not find any structural differences in the globules, and, indeed, arrived at no satisfactory conclusions. The *osseous* and *white textures* generally were, in marked cases, tintured with a yellow tinge.

From what has now been said relative to this particular part of the inquiry, it will be seen that the liver, spleen, and kidneys, were the organs in which lesion was most frequently detected, such consisting of a highly congested state, which could not fail to exert the most deleterious influence on the functions of the latter and the former, and thus from an impairment of the actions of these organs certain morbid processes were sure to be instituted in the system, calculated to be attended with serious results. In the form of fever usually termed continued, common to these islands, as also other parts of Europe, the researches of modern pathologists have demonstrably proved that the lesions most frequently discoverable are, serous effusion into the cavities and beneath the membranes of the brain, with great vascularity; an injected condition with morbid secretion in the bronchial tubes, ulceration in the digestive sur-

face, especially in the glands proper to the mucous membrane, &c. These discoveries were chiefly made by the physicians of Dublin, Edinburgh, London, and Paris, and have up to this time been considered as correct conclusions. If, however, we are to account the fever at present under description as strictly belonging to the continued class, of which there is no doubt, it is evident that the morbid anatomy has presented unusual characteristics, as organs in the autopsies of that distemper were as the rule affected, which in typhus were far less frequently diseased. It is true that embarrassment of function, and change in the structure of the brain, was sometimes noticed, as observed by Dr. Alison, yet there were often good reasons for believing that the head symptoms, and the changes which took place in the encephalon, in some of the worst cases, were frequently referrible to a perversion of the secretional functions of the liver and kidneys, most especially of the latter, as it has been endeavoured to shew that certain cases presented all the symptoms of being affected with a narcotic poison, thus rendering the head complication of a secondary rather than a primary nature.

[To be continued.]

MEDICAL ATTENDANCE ON THE POOR.

IN a discussion which took place in the House of Lords on the Irish Poor Law Bill, a noble lord moved the omission of the clause which allowed the appointment of *medical officers*. He said—

“Though he did not wish to deprive the parties of aid, he thought that injury would be done to the industrious poor who now derived assistance from medical charities: *if those charities were properly and efficiently managed, they would afford sufficient aid to all the poor without medical relief out of the poor-rate.* In moving the amendment, he was testing the sincerity of the Government as to carrying through an improved medical relief bill.”

It will be seen from this “humane” suggestion that certain parties are ready to withdraw the pittance now allowed to the medical officers of districts, and are quite ready to make use of the charitable institutions of the country in order to avoid the payment out of the poor-rate of a comparatively small sum for medical attendance! Such an unreasonable proposition was, we need hardly say, negatived.

CASE OF
HYDROPHOBIA FOLLOWING THE
BITE OF A CAT.

EMPLOYMENT OF ETHER VAPOUR AND
BELLADONNA.

By T. SPENCER WELLS, R.N. F.R.C.S.
Naval Hospital, Malta.

On Saturday, June 12, 1847, I was requested to see a case of hydrophobia in consultation. The patient was a Maltese female, aged 37, in easy circumstances, married, but without children. The day before at noon when dining, she had suddenly experienced a "spasm in the throat" on attempting to drink. In the afternoon, pain in the throat and behind the tip of the sternum came on, spasms on attempting to swallow the saliva, and general irritability. She did not think much of it, however, and went to bed, but could not sleep. The pains and spasms increasing, she sent for Dr. Adami, an intelligent Maltese practitioner residing in her neighbourhood. This gentleman saw her during the night, and on the morning of Saturday found all the symptoms increased, with the addition of a marked horror of water. I did not see her until 10, P.M. when I found her sitting on one end of a sofa closely muffled up in a thick shawl, perfectly conscious and rational, although the eyes had a peculiarly bright and wild appearance. On asking to feel her pulse she made one or two convulsive efforts, and then threw both her arms wildly from under her shawl. She was perspiring profusely; the pulse was 100, small and soft. The room was warm, but on opening the window she rapidly covered herself with the shawl and complained of the cold air. Every few seconds she gave a convulsive start, and on being questioned, said it arose from a feeling of suffocation every time a drop of saliva reached the back of the mouth. She could not allow the throat to be examined, the approach of any thing to the mouth exciting the convulsive sensation of suffocation. The bowels had not been opened for some days, and on attempting to place a few grains of calomel on the tongue a very violent paroxysm came on. When this ceased, the calomel was placed in a tea-spoon, which she took in

her own hand, and made several efforts to carry it to her mouth, but every time it approached the lips she threw her arms wildly back, and at last was obliged to desist, making use of a Maltese expression, which, literally translated, meant that she was "in harness, or in armour," and is strongly expressive of the feeling of being under the irresistible control of some superior power. On careful inquiry into the history of this case the following circumstances were elicited:—

Towards the end of January, or beginning of February last, a neighbour who had owned a dog for seven years found that this dog had strayed. After four days it returned, but was evidently ill; the eyes were red and glaring, and it could neither eat nor drink. On the following day its mouth was foaming with saliva, and it made a noise resembling the lowing of a cow. It bit a cat belonging to the same person, and she accordingly determined to have it shot. She enticed it to follow her to the home of a friend who had a gun, but it suddenly stretched itself out, and died in the road. She took no particular notice of the circumstance, as hydrophobia had been previously unknown in Malta to the uneducated. Most of the topographical works state that it has never occurred; I have never met with any one who heard of a case here, neither is there any such word in the Maltese language. Twenty-two days after the cat had been bitten, she appeared very unwell, and continued very uneasy during two following days. As she was pregnant, the owner thought the animal was suffering from protracted labour, and her idea was confirmed by the birth of three kittens. Seeing the cat still unrelieved, she rubbed the abdomen, and while doing so received a bite in the hand. The animal soon became furious, running wildly round the room, and she was therefore locked up in a small chamber, but after some days she leaped from a window at a great height, ran along the street, and bit two other women, five days after having bitten her own mistress. She was then drowned by some of the neighbours. The hand of the owner swelled greatly after the bite, the pain and swelling extending to the shoulder, and she was obliged to carry her arm in a sling for a fortnight, but has since experienced no bad symptom.

One of the women was bitten in the little finger, and profuse suppuration followed; the third was our patient. She was bitten on the carpo-metacarpal articulation of the right thumb, and, for ten days after, the bite had a little pain and heat in the part, but took no notice of it. None of the women ever having heard of canine madness, no fear was excited, and consequently imagination could have had no share in producing subsequent symptoms. Our patient continued in good health, but in the third or fourth week of May complained of small vesicles under the tongue, which opened, discharged a little pus, and again formed; but the circumstance did not excite much notice. Ten or twelve days before the present attack (she could not recollect the precise day), the cicatrix on the hand became a little red, and a slight burning pain shot at times up the arm, but this scarcely excited notice, and no apprehension. The sudden spasm on attempting to swallow was the first thing that alarmed her, and this it will be seen was about three months and a half after the bite, about three weeks from the formation of sublingual pustules, and ten or twelve days from the period of recrudescence of the wound. I will now return to her condition on the Saturday evening, when I first saw her.

The cicatrix being still red and painful, it was thought that although absorption of the poison had long since taken place, some local action exciting general irritation might possibly be going on, and I therefore, with the free consent of the patient, completely excised the cicatrix, not so much with the hope of doing good, as with the wish to leave nothing undone which might by some remote contingency be of use, and with the hope of calming the mind of the sufferer by an assurance that as the cause of her suffering was removed, she would do well. Indeed, the excision was certainly followed by a state of greater tranquillity; she believed the assurance, and smiled in a very peculiar manner, remarking that her laugh felt painful, and must seem strange. She did not sleep during the night, but the convulsions were less violent. On Monday morning they became much aggravated, when suddenly she could not lie down, and at 9 A.M. we found her standing in the middle of

the room, supported by two men, being occasionally violently arched backwards convulsively, and every two or three minutes ejecting by vomiting and great straining effort, large quantities of white tenacious mucus and saliva. She had passed urine, but the bowels had not been opened. The eyes were wild and staring, and she was continually passing her hands before them as if waving off flies. She said black spots were constantly floating before her eyes. She answered questions rationally, but said she felt she was going mad. The mention of any article of food or drink, or the mere idea of swallowing, brought on the terrible convulsions, as did the approach of anything towards the mouth. It was determined to try the effect of the inhalation of ether, and application of the ordinary apparatus being clearly impossible, she was persuaded to carry a sponge impregnated with ether to her mouth and nostrils; but the instant the vapour reached the fauces it excited the convulsions, and she was obliged to desist, notwithstanding her own strenuous efforts to continue. Soon after this, belladonna was applied endermically. Half an hour afterwards she fainted, and remained comparatively tranquil all the afternoon and evening. The saliva was ejected in smaller quantities, the convulsions were much less severe, resembling merely the kind of effort a person with swollen tonsils makes to swallow saliva, and attended by comparatively trifling spasms of the voluntary muscles. The pupils became dilated, the pulse very small and rapid, and she remained in this state until 11, P.M., when she died without any return of the violent paroxysms, sixty hours from the commencement of the pharyngeal symptoms.

On Sunday this case was also seen by Messrs. Walshe, Martin, and Rae, all medical officers of the navy, and Dr. Gravagna the police physician. The friends would not allow any examination of the body.

With regard to the treatment, considering that bleeding, mercury, opium, and a host of other remedies had been fairly tried and uniformly failed, it was determined not to worry the patient with a repetition of any such experiments, although some mercurial ointment was rubbed along the spine, and a few drops of castor oil around the umbilicus, to satisfy a zealous medical

friend. It was determined that she should not be induced to swallow anything, the drain of fluid from the system by the skin, kidneys, and salivary glands, being supplied by about six ounces of weak broth injected with a little laudanum every two hours into the rectum. This neither excited opposition nor convulsion. The inhalation of ether being impracticable, and neither Indian hemp nor the *Scutellaria lateriflora* obtainable, we agreed, in consequence of Mr. Youatt's statements of the powerful effects of belladonna upon dogs, to apply the extract endermically in such a quantity as would ensure the full operation of the drug. Two drachms were accordingly spread upon a piece of linen and applied to a blistered surface at the nape of the neck. In half an hour she fainted, and as just described the most violent symptoms ceased. It is a question whether the cessation of the terrible paroxysmal convulsions was owing to the belladonna, or to exhaustion of the vital powers of the patient. We all had our doubts about this, but when we consider that in the great majority of recorded cases the paroxysms have gone on increasing until the moment of death, or that remissions have been very temporary, that fainting is not commonly observed, and that it came on half an hour after the application of the belladonna, that the pupils became dilated and the state of comparative quiescence continued during fourteen hours, I think it highly probable that this state was owing to the action of the drug. If this be allowed, another question arises, namely, whether the woman died of hydrophobia, or was poisoned by belladonna. But on reflecting that no authentic case is on record in which any human being or animal in whom the disease has been clearly developed, has recovered, and that the pharyngeal spasms continued although feebly until the last, I think we must allow that the poor sufferer was not poisoned, but, on the contrary, was relieved from sufferings truly horrible to contemplate, and enabled to sink calmly and quietly into her last sleep. Should another case fall into my hands, I should be inclined to apply the belladonna in the same way, but earlier, wash the blister as soon as the effects were produced, and reapply it if the paroxysms should return with increas-

ing force. I would not disturb the patient by other experiments, neither allow anything to approach the mouth, nor alluding in any way to eating and drinking, and supply fluid to the system by anal injection.

The cicatrices on the hands of the other two women could only be effectually removed by amputation of the hand in one case, and of a finger in the other, and this has not been recommended, as it is clear absorption of the poison took place at the time of inoculation. Should the sublingual pustules appear they will be immediately cauterized, in consequence of the well-known experiments of Marochetti.

This being the first case ever known to have occurred in Malta, I have been very anxiously endeavouring to discover whether the disease had been imported, and the dog first affected bitten by another. Nothing is more probable, as vessels are continually arriving from other countries and mostly carry watch dogs, but as yet I have not been able to obtain any information on the subject. Should I do so, or should either of the women suffer from hydrophobia, I will trouble you with another communication. I in the meantime should feel obliged if you or any of your correspondents could inform me whether the Indian hemp, or the *scutellaria*, has been tried in hydrophobia in the human subject.

Royal Naval Hospital, Malta,
June 14, 1847.

* * This case suggests many important subjects for reflection. The local effects produced by the bite were much more severe than usual. They were such as might be expected to arise from inoculation by a virulent poison, and very closely resembled those which are produced by the bites of venomous serpents. It would have been interesting to have determined in this case whether the poison was transmitted from the parent animal to the kittens in utero. Professor Coleman has recorded a case in which a sow was bitten while pregnant, and the whole litter of pigs were subsequently seized with rabies. An account of this case will be found in the seventh volume of the *Medico-Chirurgical Review*, page 236. Mr. Wells's case furnishes a complete answer to the supposition formerly entertained, that no poison is communi-

cated, but that the effects are due to fright and constitutional irritation. Although this is the first case that has occurred in Malta, yet, within a recent period, rabies has manifested itself in several instances among animals in the French possessions of Algeria.

STRANGULATED FEMORAL HERNIA REDUCED UNDER THE INFLUENCE OF ETHER VAPOUR.

MARY CREEK, *et. 61*, entered the St. Marylebone Infirmary, July 10, 1847, with strangulated femoral hernia on the left side. The gut had been down six days, and she had not had a passage through her bowels since. The tumor was about the size of an egg, extremely tense, hard, and tender to the touch, and tilted over Poupart's ligament. She had had rupture for years, but before this time had always been able to return it. She now had quick pulse, dry tongue, constant vomiting of stercoraceous matter, extreme tenderness and pain of the abdomen, with tenseness, anxious countenance, and exhaustion. An attempt was made to reduce the hernia by the taxis, but with no effect.—Ordered injections and small doses of purgatives, and a bladder containing ice to be applied on the tumor. In three or four hours from this time, Mr. Stafford saw the patient, and again employed the taxis, but with no reduction of the tumor. He recommended the continuance of the remedies, but saw no other result than the operation. He appointed 9 o'clock (it being then 4) for the operation.

At this time the patient was placed on the operating table, and, by her own request, the ether vapour was administered. When it took effect, it was proposed and agreed to by the surgeons present, that before the operation was performed one more attempt should be made to reduce the hernia. Mr. Stafford accordingly went through that process, and in rather less than three minutes returned the bowel into the abdomen. A graduated compress was placed on the opening in the ring, and a figure of 8 bandage was applied as in the operation for hernia. Some simple aperient medicine (*Magn. S. ʒij. ; Inf. Sennæ ʒi. ; Ext. Glycyrrh. ʒj. M. ft. 2da quæque hora sumend donec alvus responderit*) was prescribed. In about an hour after the reduction of the hernia, the bowels acted, and continued to do so copiously during the night. On the following evening the pain was much relieved, the patient asked for food, and retained it on the stomach. She has been doing well ever since, and, excepting a little fever and quick pulse, there is no doubt of her recovery.

MEDICAL GAZETTE.

FRIDAY, JULY 16, 1847.

WE have frequently had letters of complaint addressed to us by correspondents, respecting the inadequacy of the remuneration awarded to them by law for the performance of their duties as medical witnesses at coroners' inquests.

We this week insert the particulars of a case which unfolds the usual amount of injustice.* Two medical practitioners of Carlisle were required to examine the body of a female who had died under very suspicious circumstances. A complex chemical analysis was required, and in making this they received the assistance of two other medical gentlemen. This analysis, judging from the report, appears to have been performed with unusual care; and the whole of the proceedings reflect credit upon the skill and ability of the witnesses. It was clearly proved by them that the deceased had died from arsenic, and their evidence has, we believe, led to the committal of a person for trial on a charge of murder at the ensuing Cumberland Assizes. The medical evidence, therefore, was the great feature of the inquest: without it, a crime must have passed undetected, and another victim been added to the yearly list of the cases of secret poisoning for which England is now becoming as celebrated as Italy in the mediæval times.

The following extract from the Memorial elsewhere printed† will show the sacrifice of time made by the witnesses in conducting this investigation, and the mode in which the law proposes to remunerate them for the performance of an important public service:—

* Page 134.

† Page 134.

"That the said examination and analysis, with subsequent attendance at the several sittings of the coroner's jury, for the purpose of giving evidence, occupied each of your memorialists on an average four hours daily for a fortnight; on one or two occasions, and at particular stages of the process, for as many as twelve hours at a time, to the neglect, for the time, of other remunerative calls.

"That, besides this indirect loss, your memorialists have expended a considerable sum of money in the purchase and renewal of apparatus and materials indispensable in such investigations; and that for the whole of the above services, and outlays, and losses, your memorialists have received, as all the requital that the coroner is empowered by law to give to them, the sum of eight guineas, or, to each individual, two guineas.

It is not our intention to discuss the provisions of the Medical Witnesses' Act. There is no doubt, that, by defining the powers of coroners over members of the medical profession, by marking out the duties of witnesses, and by fixing a *certain* amount of remuneration, it has been productive of benefit. That the fees fixed by the 3d section are wholly insufficient in the greater number of cases for the duties assigned to the medical witnesses, cannot be disputed, except by those who have merely a theoretical knowledge of the time and means required for making a post-mortem examination and a proper chemical analysis. It is a curious fact, however, that the Act provides no fee whatever for the most troublesome and expensive part of the investigation—namely, the detection of the poison *absorbed* and *deposited* in the *viscera*! It clearly specifies—and the words are three times repeated in the Act—that the fee of two guineas is payable on a post-mortem examination for an analysis of the "*contents* of the stomach and intestines." Let us assume that the case is one of supposed poisoning by arsenic: if the coroner is

to keep to the strict letter of the Act, and to fall back upon Schedule B as a justification of offering *two guineas*, when ten guineas would hardly cover the time and money expended in the research, to say nothing of the skill and experience demanded for conducting it, let the medical witness keep also to the letter of the statute,—let him make an "*analysis of the contents of the stomach and intestines*," and leave the tissues of the body untouched, unless a proper remuneration for this additional labour be guaranteed to him, and we venture to predict that the matter will soon be equitably adjusted. The analysis of the "*contents*" of the viscera need not in all cases occupy much time; and an opinion may soon be formed respecting the presence or absence of poison in them. It is very likely that this opinion may not be conclusive, as there is often no poison to be found in the "*contents of the stomach or intestines*," and the detection of that which is absorbed into the lesion is now properly regarded at every trial as of the very highest importance, because it proves incontestably that the poison was actually taken during life; but, since no adequate provision for such an intricate investigation has been made by law, the refusal to undertake this very responsible duty cannot be ascribed as a fault to the medical witness! If, in such a case, and under such defective evidence, a coroner's jury came to a verdict of wilful murder by poison, it would be at once made apparent to the judge, by the failure of justice at the trial, that there was a radical defect in the statute, and one which required an immediate remedy. In adopting such a course, it would, in all cases, be proper to give the coroner fair warning that the chemical analysis would be undertaken in the cheap and less troublesome form provided by the Act of

Parliament; i. e. that it would be a "two-guinea analysis" under schedule B! To strike an average, and contend that in the long run, two guineas for each inquest will be found a fair remuneration, is not only preposterous in principle, but absurd in fact. How are such cases to be meted out, and what is to prevent a series of difficult and expensive analyses falling to one practitioner? He would not be paid for the sacrifice of his professional practice and pecuniary means, by knowing that his neighbour had received his two-guinea fees for merely opening a body without making any chemical analysis whatever! Such an idea is ridiculous in the extreme; we might as well attempt to prove that the whole of the inhabitants of a town or village must be well and abundantly fed, because the weight of provisions consumed, divided by the number of persons, would yield a fair average daily ration for each!

It is our conscientious belief, that had a higher scale of fees been fixed by the Medical Witnesses' Act (6 and 7 William IV. chapter 89), it would have been an obstacle to its passing into a law. Our legislators appear to consider that whenever the remuneration of medical men comes as a question before them, they are perfectly justified in fixing a *minimum*. Thus, a medical practitioner is expected, *ex officio*, to attend and prescribe for some thousands of paupers either gratuitously or on a payment of about sixpence or a shilling per head per annum! He is also expected to undertake very disgusting, troublesome, and responsible duties for the guidance of coroners, and in aid of public justice, for a sum so paltry that no respectable person belonging to any other profession, could be found upon such terms to devote one-half of the time commonly required for their performance! The real question, however, is—are medical

men justified in thus working gratuitously? We think not; because the more they yield to such demands, the greater will be the exactions made upon them. An Act which compelled solicitors to provide tape, parchment, and stamps, gratuitously for the public, and to give two, three, or more days, in drawing up conveyances for a fee of *two guineas*, would be inoperative. It would rouse the anger of all the members of that disinterested profession from the Land's End to Berwick-upon-Tweed, and we should speedily have it obliterated from the statute-book—even if Parliament met for the purpose! yet, is the injustice the less because medical practitioners are treated on this principle? Assuredly not. If true to themselves, and if desirous of maintaining the honour and respectability of the profession of which they are members, they would not have to stand long supplicating for the abolition of a gross piece of injustice! As it is, in conducting these onerous investigations they must either become losers, or they must be content to be beggars, in order to obtain a fair remuneration of their services! The subscribers to this memorial have taken a right course in resolving to appeal to the judge at the ensuing trial. These functionaries are better informed of the value of the services rendered by medical witnesses than county magistrates; and if the facts be properly placed before the judge on this occasion, he will doubtless order a more adequate remuneration than that awarded by law.

In the meantime, we invite all those who are called upon to make chemical analyses for coroners' inquests, to consider well their position. To adopt the words used by the memorialists,—“all the requital that the coroner is empowered by law to give to them” is a fee of *two guineas*. The act which

thus stints the liberality of the coroner, fortunately fixes the precise amount of trouble to be imposed on the medical witness, in order that this fee should be legally payable to him. It is *totidem verbis* "for making a post-mortem examination of the body of the deceased (by order of a coroner) either with or without an analysis of the contents of the stomach or intestines, and for attendance to give evidence thereon." The conditions, it will be seen, are explicit, and are free from any doubt or ambiguity. The "analysis of the contents of the stomach or intestines" can no more be made to include an elaborate analysis of the tissues of the liver, blood, or muscles, than can the fee of two guineas be made to include one of ten guineas! The coroner and the witness are therefore not responsible for the result: they are both guided by the letter of the act, and can equally justify themselves by a direct appeal to its provisions! It is very true that even this fee is insufficient for the performance of the duty legally required; but still this evil can only be redressed by appealing to the common sense of a new Parliament. If medical men choose to undertake more than the law requires of them, they have no right to complain of coroners and county magistrates, who are wiser in their generation, for not departing from the letter of the statute!

ANALYSIS OF CARIOUS BONE.

CARIOUS bone has been analysed by Von Bibra, whose investigations show that in caries the osseous substance becomes destroyed, and is gradually removed, and that the saline portion disappears in a greater ratio than the cartilaginous. The whitish fluid matter impregnating the spongy tissue of the bone, and filling the cavities formed by the caries, is merely the detritus of the surrounding tissues, containing the same phosphate of lime and the same gelatinous matter mixed with fatty matter."—*Dr. Day's Report on Chemistry*, 1847.

Rebiews.

Guy's Hospital Reports. Vol. IV. Second Series. London: Highley. 1846.

Concluding Notice.

THE number and importance of the papers contained in the last volume of the Reports, has already compelled us to devote two articles to their analysis, and we fear that we shall scarcely succeed in giving a notice of the whole of the remaining essays in the present article.

The author of the fifth paper in this volume, entitled "On the Physiology of Cells, with a view to elucidate the Laws regulating the Structure and Function of Glands," is Dr. Thomas Williams, of Swansea, who is already known to the profession as the author of an elaborate paper on the pathology of cells. In the present observations the author commences—

"an inductive course of ascensive inquiry, with a view to the determination of the true laws regulating the organization and function of the liver."

the leading facts of the paper being deduced from the author's own observation of the minute anatomy of the biliary organs, or their analogues, in the actinia, star-fish, earth-worm, medicinal leech, house-fly, goat-moth, shrimp, crab, oyster, slug, snail, sole, flounder, and other fish; of the newt, frog, snake; of certain birds, and of some of the lower mammalia; and, lastly, of the human subject. We wish that our space would permit us to follow Dr. Williams through all the steps of the interesting detail by which he has endeavoured to display the gradations from the lowest to the highest type of an important secretory organ, but we must be satisfied with giving one of the author's descriptions as a specimen of the whole, or, rather, a portion of a description; for, as in the original it is continued through five entire pages, without a single break, we have been compelled to divide it somewhat abruptly.

"From the description of all preceding observers of the structure and peculiarities of these humble organisms, it was confidently expected that the biliary system in the actinia would be discovered under cir-

circumstances of the greatest practicable simplicity:—under the form, namely, of a follicle in the walls of the digestive sac. Practical inquiries will indisputably prove that such statements are founded only on theoretical suppositions. Each succeeding author on comparative physiology has at once admitted and transmitted the errors of his predecessor; so that it has actually become an axiom, that, however inextricably complex an organ may be in the highest orders of animals, its remote sub-multiple, its rudest dawning in the distant extremity of the declining scale, will be found, without a solitary exception to diversify the monotonous law, to consist of a follicle. This is the invariable terminus of all researches after the “analogous” and morphological reductions of organs, which acquire complexity of internal arrangement. In regard to the provisions made for the supply of secretions in animals, of which the body altogether is no more involved than a large follicle, it seems superfluous to urge the argument that, if a follicle, with its component machinery of cells, membranes, and vessels, were furnished for the exclusive purpose of elaborating a single secretion, a subordinate organ, subservient to uses of a minor importance, would exceed, in complexity of structure, the organism viewed as a whole. In the minute structure of the actinian polype direct proofs may be obtained to confirm the view, that a follicle is not the ultimate link in the chain of morphological reductions. Aggregations of nucleated cells occur in the depressions between the vertical duplications of the digestive membrane, which, in their intimate organisation, seem, in a very obvious manner, to unite all the requisites of a gland. These cells are held together by, and are lodged in, a semi-fluid plasma of extremely tenacious property,—a property which acquires importance in the use apparently assigned as one of its functions of holding the cells *in situ*, and of preventing displacement and injury during the dilations and contractions which the stomach is destined to undergo. The epithelia attached to the convex parts of the membranous folds are more transparent, less charged with granules, and inferior in size to those occupying the sulci. The difference is extremely trifling between those cells in the sulci, which seem clearly to claim the character of glands, and those found in the stomach-wall” (pp. 281-2).

We recommend a careful perusal of Dr. Williams's paper to all who put implicit faith in the doctrine of cells; it contains many points of originality and interest; we must, however, suggest that the value of the paper would

have been enhanced had Dr. Williams written it in somewhat plainer and more simple language.

Case of supposed Spontaneous Perforation of the Stomach, terminating successfully. By H. M. HUGHES, M.D., and *Case of Ulcer in the Stomach, leading to perforation and death in nineteen hours.* By EDMUND RAY. *With an Account of the inspection of the body, and observations.* By JOHN HILTON, F.R.S.

THE subject of the case detailed in the above papers was a female servant, *etat.* 27 or 28, who was admitted to Guy's Hospital on February 26th, 1846, with symptoms of perforation of the stomach. She had a chlorotic appearance, and the catamenia were scanty and somewhat irregular; she was also subject to occasional leucorrhœa. She had previously complained of uneasiness in the epigastric and left hypochondriac regions; and, after taking food, suffered so much pain, that she had almost abstained from taking any aliment for three or four days antecedent to the attack. She had for some months been troubled with “bilious attacks,” and she stated that she had taken nothing into her stomach for four hours before she was seized with the violent pain, and then only a little gruel. After preparing the family dinner, she sat down in a chair, and it was in the act of getting up that the severe epigastric pains supervened. It was mentioned as a remarkable coincidence, that she had a sister who, at the age of twenty, while in the enjoyment of good health, was attacked with violent pain in the stomach, which was followed by death on the next day: Mr. Ray was sent for at four P.M., and found her extended upon the bed, lying on her stomach, in a state of extreme collapse. Her countenance was expressive of great anxiety; the extremities and surface of the body generally were cold, and the pulse was scarcely perceptible; she was sensible, but disinclined to answer when spoken to, and complained of constant pain in the epigastrium and right shoulder; the abdomen was not tumid, or tender on pressure. Twenty minims of tincture of opium were given in a little water, and repeated at five o'clock. At 6 P.M., she expressed herself a little easier; the pulse was

more easily felt; the extremities and skin were still cold; she had some retching, but no vomiting; and she passed some urine. A grain of opium was given in the form of a pill, and repeated at half-past seven, at which time she was carefully removed to Guy's Hospital, where she arrived about half-past eight, somewhat rallied. When visited there, the countenance was found to be sunk and anxious; the face pale; the extremities rather cold; the tongue moist and clammy; the pulse 110, small and feeble; the respirations 34, and rather catching; the abdomen large and tympanitic, but not to any great extent; the pain had greatly diminished, and tenderness on pressure existed only in the epigastrium. She was ordered to take half a grain of opium, in the form of a pill, directly, and to repeat it every three hours; and, if she wished it, two teaspoonfuls of toast water, by measure, every hour, but no other sustenance, either solid or fluid, of any kind whatever. She was also desired to maintain the perfectly supine and recumbent position in bed, and on no account whatever to move or be moved, excepting under the superintendence of Dr. Hughes. A large linseed-meal poultice was ordered to be kept constantly applied to the whole abdomen. On the day immediately succeeding this report, there were evidences of general peritonitis, but not of an extremely violent character; on the two following days there existed considerable hypogastric pain and tension, requiring the removal of the urine by catheter; there was some hardness in the epigastric region, which was more tender than in other parts of the abdomen; on the fourth day, however, the only remains of tenderness on pressure existed in this situation. On the fifth day she was carefully removed in a sheet to another bed without change of position: she complained of general pain of the abdomen, which was still large and soft, except in the epigastric region. From this period the symptoms of peritonitis appear to have subsided rapidly, and up to the fifteenth day she suffered from no untoward symptoms, with the exception of temporary griping pains on the eighth day, which were restrained by the administration of twenty instead

of four minims of tincture of opium in an enema of five ounces of tepid beef-tea, which had been administered three times in the twenty-four hours since the fourth day.

On the 15th day she was troubled with pains in her stomach, and on the morning of the 16th, her countenance was somewhat anxious, and the face pale. She complained also of pains under the left breast, and was evidently very much alarmed as the pain passed through her shoulders, as it had done in her original attack: the pulse numbered 108, and the respirations 48. The bowels had not been relieved since the 11th day. She had latterly taken a little more fluid sustenance. These symptoms were shortly relieved by spontaneous action of the bowels. From this time until her discharge (on the 50th day) no untoward symptom presented itself. Great care appears to have been taken in the choice and administration of her nourishment, and in the maintenance of strict rest. It was not until the 20th day that she was permitted to take the yolk of one soft boiled egg, and also to sit up in bed. On the 29th, she was allowed four ounces of bread to sop in her broth and tea. On the 32d day she had some bread and butter, and was permitted to walk about the ward. On the 48th day she was allowed to walk in the square of the hospital, and to have a mutton-chop. At the time of her discharge the bowels were relieved daily; she had no pain after eating; the tongue was clean, pale, and moist; the face pallid; the abdomen soft, flaccid, and free from tenderness; the pulse 88, feeble, and irritable. She was discharged at her own request. Dr. Hughes states his conviction, and we think with scarcely a possibility of contradiction, that the symptoms in this case were due to perforation of the stomach. He regards several of the circumstances which attended this patient's attack as materially contributing to its very unusual favourable termination.

"In the first place, the patient had taken nothing into her stomach for four hours at least before the occurrence of the acute attack; and then only some gruel, easily digested and quickly absorbed. It is therefore probable that no food of any kind was present in the stomach, and therefore that none was effused into the peritoneum. In

the second place, the medical gentleman" [Mr. Ray, of Dulwich] who was first called to her, at once suspecting the nature of the lesion, administered only opium in a small quantity of water. No stimulant or aperient medicine was prescribed, as has unfortunately too frequently been the case in similar attacks: none therefore would have escaped into the peritoneum. The plan of treatment so judiciously commenced by Mr. Ray was implicitly followed in the after-treatment. No stimulant or laxative medicine was administered, until it became almost certain that adhesions had taken place. Finally, the patient was an unusually quiet, docile, and manageable person, and for many days implicitly obeyed the particular instructions which were laid down by her medical attendant, and which were carefully carried out by the nurse, who watched her with great care and assiduity."

On the 21st of June, 1846, at 4 P.M., this patient was again attacked with violent symptoms of perforation of the stomach. For the last few days she had not taken her meals as usual, but had lived principally on fruit. According to her own account, she had partaken only of cherries on the 20th, and had eaten nothing but gooseberry-tart on the 21st. On the morning of that day she complained of diarrhoea, with pains in the stomach, which were attributed solely to diet, and she appeared better towards the afternoon. When attacked, she experienced a sudden and severe pain in the stomach, and fainted: she was shortly after carried up stairs, and brandy and water administered. (This unfortunate step was taken before Mr. Ray arrived.) Notwithstanding the careful employment of treatment similar to that which proved successful in the previous attack, she died at 11 A.M. on the 22d.

Examination.—On opening the abdomen, air escaped in a continuous stream from the peritoneal cavity. In the recesses between the intestines were found a considerable quantity of turbid fluid, containing portions of gooseberries, cherries, and strawberries, in addition to very numerous small shreds of lymph: the largest accumulation of this fluid, with extraneous matter in it, was situated in the right hypochondrium. A few short cellular adhesions existed between the adjacent convolutions of the intestinal canal; and here and there some of the same kind of old adhesions were found

joining the abdominal parietes to the intestines and stomach: nearly the whole of the peritoneal surfaces of the different viscera were covered by patches of fibrine obviously the result of recent inflammation. There were also extensive old cellular adhesions of the stomach to the liver in front of the smaller omentum. The stomach presented a central constriction, known as the hour-glass contraction of the stomach, but not in an extreme degree.

An abnormal opening from the stomach into the peritoneum was discovered about midway between the œsophageal and pyloric apertures. The contents of the stomach were composed of cherries, strawberries, and gooseberries scarcely broken; these were aggregated at the pyloric extremity of the stomach, and completely filled it. The abnormal opening was occupied by a piece of a strawberry. About midway between the œsophagus and pylorus, and towards the smallest curvature of the stomach, the rugæ of the mucous membrane were found radiating towards the pylorus from a small surface, which had all the appearance of the cicatrix of an old ulcer. Half an inch below this part was seen a recent ulcer, about the size of a four-penny piece, irregular in outline, its edges unequal in thickness, and highly vascular: it had extended through the mucous membrane and the sub-mucous fibrous structure as far as the muscular fibre.

About half an inch above the cicatrix to which reference is made, was placed the base of the conical canal, passing upwards and backwards obliquely through the stomach, which had allowed the escape of some of its contents into the peritoneum, and so caused the death of the patient. Mr. Hilton is disposed to believe that the perforating ulcer which caused her death, was the same which induced her previous illness; and that the peritoneal opening became closed by the deposition of adhesive matter around it, fixing it to the nearest organ, the liver, and that the occlusion was complete up to the period of the beginning of the recent fatal symptoms, when some of the old adhesions were detached or broken through, from the distension of the stomach by a large quantity of fruit, or some other mechanical cause, and so allowed the second

escape of the contents of the stomach into the peritoneum. This opinion was particularly countenanced by the fact that there was seen a thick layer of old lymph, in part detached from the peritoneum, over the opening, allowing of an escape through it, but which, during its super-position, as regarded the opening, would have as completely prevented any occurrence of the kind. Mr. Hilton believes that this kind of ulcer, of which he has seen many examples, is not accompanied by hæmorrhage. But he has several times, in fatal cases of hæmatemesis, discovered the source of the blood in a very small active ulcer, which, from its diminutive size, can only be detected by looking carefully over the stomach, especially towards the cardiac extremity, where the ulcer, accompanied with hæmorrhage, is usually situated; and sometimes even it is requisite to inject the blood-vessels with water before, the ulcer can be detected. This process of injection will frequently discover a clear source of hæmorrhage in ulceration of a small blood-vessel, which otherwise would be considered merely an exudation of blood from the general mucous surface, which Mr. Hilton believes to be of very rare occurrence, even if ever it happens, in fatal hæmorrhages from the stomach. Mr. Hilton justly adds, that the above examination suggests some most important indications in reference to administration of food in similar cases; it points out the fatal indiscretion, notwithstanding the very earnest advice of Dr. Hughes to this patient, of distending the stomach, and counsels the propriety of carefully abstaining from any large quantity of food at one meal, of avoiding every thing not easy of digestion, or likely to produce flatulency, and, further, the careful avoidance for many months of any undue pressure upon the abdomen; forasmuch as any one of these circumstances might lead to a disturbance of the adhesions, and death, as happened in this case.

We have been anxious to present our readers with as full an abstract as possible of the above case, regarding it not only as highly creditable to the judgment of the gentlemen who conducted the treatment, but as affording a prospect of success in the management of this terrific malady, and as in-

dicating the course of treatment which should be scrupulously pursued in subsequent cases.

The eighth paper contained in this number of the "Reports" is from the pen of that industrious pathologist the late Mr. T. W. King, and is entitled "*Appearances in the Stomach after Death.*" It is intended to carry out some interesting observations on the action of the gastric fluid, after death, upon the most depending portions of the stomach, œsophagus, and duodenum, published by Mr. King in previous numbers of this work, and in the *MEDICAL GAZETTE*. The style of this paper is, however, too obscure to admit of analysis: it was one of this talented gentleman's latest productions, and was probably written under the oppression of rapidly declining health.

The next memoir is a "*Digest of One Hundred Cases of Chorea treated in the Hospital: by H. M. Hughes, M.D.*" Dr. Hughes states, that about a quarter of these cases have been under his own care. The table confirms the accuracy of the generally-received opinion that females are more liable to this disease than males. Thus, of the hundred cases, in seventy-three, or nearly three-fourths, the disease occurred in females; and, in only twenty-seven, barely more than one-quarter, it existed in males. With regard to the age, it is found that there occurred below the age of ten, 33 cases—11 males and 22 females; above fourteen and under fifteen, 45, of whom 11 were males and 34 females. 22 cases occurred in patients above 15 years, and of these, 5 were males and 17 females.

Dr. Hughes remarks—

"From this comparison, it will be seen that support is afforded to the opinion that functional irregularities of the uterus, about the period of puberty, have considerable influence in contributing to the preponderance of the females over the males affected with chorea. It will be observed, that, while the number of the males attacked below the age of ten, and between ten and fifteen, is exactly equal, the number of females attacked within the latter term is half as many more than those attacked in the former term; and that while, among lads, boys and youths are equally liable to the complaint, among girls it is during youth, at the time when they

are upon the verge of womanhood, that they are more especially prone to be affected with it. It may also be worthy of notice, that the two youngest patients, aged five and six, were males, although their number is so much smaller than that of the females."

Under the head of "*Alleged Exciting Causes*," it is found, that, out of 58 cases, 31 were attributed to fright, and 8 to rheumatism. After commenting upon the frequency with which the former of these causes operates in producing chorea, Dr. Hughes remarks, that the complaint may in these cases, also, sometimes be cured by an impression similar to that which originally produced it; and, in illustration of this fact, relates the following case:—

"A girl, who had been in the hospital for chorea, and who went out cured, had a return of her complaint. She was going to the hospital to apply for readmission, but, on her way, was much alarmed as she passed over London Bridge, by a person being run over. She, however, pursued her course. On her arrival in the room in which the patients are selected for admission, both she and her mother were much surprised to find that the complaint had left her. She therefore went home again, and had not, so far as I know, any return of the disorder."

Next to fright, Dr. Hughes regards rheumatism as one of the most common causes of chorea. He thinks that it appears to be at least doubtful, whether, in most of the cases where spasmodic affections are associated with pericarditis, there exists anything more than a sympathetic affection of the spinal marrow, seeing that, after the removal of the rheumatic affection, the chorea is usually curable by the same remedies which are found available in cases of chorea having a different origin. Dr. H. adds, that there are, however, some exceptions in which the membranes of the cord seem to be inflamed and thickened, and in which local depletion, counter-irritation, and the continued action of mercury, appear to be the means more especially calculated to remove the complaint which in such instances is often very rebellious.

The author's remarks on the various remedies employed in the treatment of chorea are ample and practical: we regret that we can only give insertion to his observations on the use of zinc:—

"This metal has been more largely ad-

ministered than any other. In all cases, with the exception of two, which were successfully treated by the oxide, the sulphate has been the form in which it has been prescribed. Beginning with one or two grains two or three times a day, it has usually been gradually increased by a grain to each dose at each visit, twice or thrice a week, or by adding one grain daily to the whole quantity taken in the day. It has been given either in the form of pill or in solution. The dose has been increased up to thirty-six grains three times a day: it has not often caused sickness. The stomachs of some persons, however, appear unable to bear it, even in small doses; and in others the organ rebels against its increase after a certain number of grains has been attained. It has in some cases been thought desirable gradually to withdraw the use of the remedy after the cure has been effected, or where it has been nearly complete, though I am not aware of any ill effects having resulted from the neglect of this desirable precaution. It has been supposed that zinc rarely cures chorea until large doses have been gradually attained. I have myself participated in, and acted upon, this opinion. It is right, however, to acknowledge, that, under my own observation, the correctness of this supposition has not been proved experimentally. In the practice of the hospital, I am not aware that it has been shown that small or moderate doses of the mineral, continued an equally long time, will not effect a cure. Some evidence exists to support the contrary opinion. In one of the cases in the table, two grains given three times a day, and continued for three weeks, effected a cure; and several are reported in which four, five, and six grains only were prescribed, with the desired effect. It may be supposed that the disease in these instances was of a mild character, and I am not prepared to say that it was not so. Zinc was prescribed in 63 cases: of these, it effected a cure in 48, or 71 per cent.; it relieved in 2; it failed to effect a cure in 16, or 25 per cent. In seven of the forty-five cases, iron had previously failed: the zinc was given together with iron in one, and together with the administration of electricity in five cases. In two cases the zinc was given in the form of oxide."

Of the hundred cases contained in the table, the result was—cure in 80 cases; almost perfect cure in 7; relief in 6; little improvement in 4; death in 3. The author considers that the above cannot be regarded as affording a very favourable evidence of the treatment adopted, as the worst cases of chorea only are, as a rule, taken into the hospital; and, of those which are

taken in, many of the slighter cases are not reported; while of the more severe, and especially of the fatal cases, it is almost certain that notes will be preserved.

Medical Trials and Inquests.

MEDICAL REPORT ON A CASE OF POISONING BY ARSENIC. MEMORIAL TO THE MAGISTRATES ASSEMBLED AT THE CUMBERLAND QUARTER SESSIONS, ON THE INADEQUACY OF THE REMUNERATION ALLOWED TO MEDICAL WITNESSES.

On the 29th May, 1847, Mrs. Mary Thompson, of Carlisle, died under somewhat suspicious circumstances. Dr. R. Elliott, assisted by other medical gentlemen, examined the body, and made a chemical analysis of the viscera for the coroner's inquest. They drew up the following medico-legal report:—

Post-mortem Examination, six to eight hours after having been found dead.

Externally.—Body well-proportioned—muscular—of healthy appearance in all respects—head and neck livid—hands slightly livid and half closed—countenance placid—eyes dull—pupils rather dilated than otherwise—sides and back of the body livid.

Internally.—Organs within the chest all healthy.

The Gullet.—Its lining membrane exhibited quite a healthy appearance throughout.

The Stomach externally presented in front a general reddish tint, with a very markedly inflamed part near to where the gullet joins the stomach; here the surface was flaky over a space equal to the size of a crown piece. Internally there were many patches of redness, mostly opposite to the part on the outer surface just noticed as the most inflamed. On the inner surface of this same portion were several small ulcerations about the size each of a split-pea, with arborescence or vascularity, much more around their margins than elsewhere. The stomach contained a few ounces of liquid, in appearance like oatmeal-gruel, tinged with bile.

The Liver was larger and paler than natural; its consistence was natural.

The Intestines externally exhibited everywhere a natural appearance; no discolouration or effusion of any kind. Internally there was increased redness in the first portion of the small intestine, and in the last portion of the large intestine. There was

no other unusual appearance met with in the intestines.

The other organs in the abdomen were of perfectly healthy appearance.

The parts within the skull exhibited nothing unusual.

(Signed) ROBERT ELLIOT, M.D.
JOHN MORTIMER, Surgeon.

Chemical Analysis of the Stomach.—A decoction was obtained in the usual manner, and clarified; of this, different portions were subjected to the following processes:—

1. The ammoniacal sulphate of copper gave a green precipitate;

2. The ammoniacal nitrate of silver gave a yellow precipitate; and

3. A stream of sulphuretted hydrogen gas gave also a pale yellow precipitate.

4. The last named yellow deposit or precipitate, was carefully separated and dried; this, in the usual manner, was reduced in a glass tube, when a polished steel-grey coating appeared, with a little higher up in the tube, a deposit of a white crystalline appearance. On breaking the tube the steel-grey coating was found, on its inner surface, of a rough dark grey appearance; under the microscope it appeared in places spicular and doubtfully crystalline.

5. In another portion of the liquid, (obtained by boiling the stomach) and to which a little muriatic acid had been added, a bunch of fine and bright copper wire was boiled. In a few seconds the wire became uniformly of an iron gray colour; this discoloured wire was then carefully dried, and heated in a test tube over a spirit flame; the result was an abundant deposit, of sparkling crystalline appearance, semi-transparent and colourless, distinct to the naked eye. Under a powerful microscope, this was found to consist of octohedral crystals, their surfaces being triangular. On breaking the test tube, and boiling in distilled water the fragments, to which the above crystals were attached, a clear liquid was obtained, with which the experiments one, two, and three, were repeated, and with the same results as before.

Through a fourth part of the original fluid, a stream of sulphuretted hydrogen gas was passed, and the yellow precipitate obtained was purified and dried; its weight then was seven grains. These tests infallibly indicate the presence of arsenic.

The intestines, with their contents (similar to the oatmeal gruel-like fluid found in the stomach) were subjected to similar treatment, and with similar but more marked results.

A careful calculation gives twenty-eight grains of the yellow precipitate, or yellow arsenic, from the stomach alone, and thirty-six grains of the same from the first three feet of the small, and the last eighteen inches of the large intestines; in all sixty-four

grains of yellow arsenic or orpiment—corresponding with very nearly fifty-one grains of arsenious acid, or what, in commercial language, is called "white arsenic," or simply "arsenic."

The blood, the liver, and the contents of the stomach, yielded results not decided or satisfactory.

ROBT. ELLIOT, M.D.

THOMAS ELLIOT, Surgeon.

JOHN MORTIMER, Surgeon.

EDWARD BOWMAN, Surgeon.

(Signatures.)

"We, the undersigned, duly considering the symptoms, the *post-mortem* appearances, and the chemical analysis, as deposed to, this day, in the evidence and the above report, have no hesitation in ascribing the death of Mrs. Mary Thompson to arsenical poisoning.

"THOMAS ELLIOT, Surgeon,

"EDWARD BOWMAN, Surgeon.

"JOHN MORTIMER, Surgeon.

"ROBERT ELLIOT, M.D.

"Saturday, June 12th, 1847."

[The materials used in the above analysis were carefully tested previously to each experiment.]

These gentlemen have since addressed the following memorial to the magistrates in Quarter Sessions.

"To the Chairman and Magistrates of Cumberland, in Quarter Sessions assembled.

"The Memorial of Robert Elliott, M.D. and of John Mortimer, Edward Bowman, and Thomas Elliott, Surgeons—

"Sheweth—that your Memorialists were summoned by William Carrick, Esq., Coroner, to report as to the cause of death in the case of the late Mrs. Mary Thompson, of Union Street, Botchergate, Carlisle.

"That in order that they might render an efficient report, your Memorialists made a very minute examination of the body of the deceased, and a careful chemical analysis of the stomach and its contents, of the intestines and their contents, of a portion of the blood, and of a portion of the liver, with a view to ascertain whether any poisons were present, and, if so, what particular poison, and in what quantity the same might have been administered to the deceased.

"That the said examination and analysis, with subsequent attendance at the several sittings of the Coroner's Jury, for the purpose of giving evidence, occupied each of your Memorialists on an average, four hours daily for a fortnight; on one or two occasions, and at particular stages of the process, for as many as twelve hours at a time, to the neglect, for the time, of other remunerative calls.

"That, besides this indirect loss, your Memorialists have expended a considerable

sum of money in the purchase and renewal of apparatus and materials indispensable in such investigations; and that for the whole of the above services, and outlays, and losses, your Memorialists have received, as all the requital that the Coroner is empowered by law to give to them, the sum of eight guineas, or, to each individual, two guineas.

"That your Memorialists were induced, at the solicitation of the Coroner, with a view of furthering the ends of justice, in the most simple and effective, yet least expensive mode, to undertake the aforesaid engrossing and responsible duties, rather than that the materials should be sent to a distance, by a special messenger, and that a medical-chemist should be brought from a distance to the inquest and subsequently to the Assizes, at an outlay by the County, at a most moderate computation, of one hundred pounds sterling.

"That your Memorialists, in further compliance with the wishes of the Coroner, have furnished many other analyses, deemed essential to the ends of justice; such as the analysis of oatmeal, of barley meal, of bread crumbs, of various kinds of powders, and of dust obtained from drawers, boxes, pockets, and the like, found in the house of the deceased.

"That your Memorialists respectfully submit to your Worshipful Bench, that for their services, loss of time, and expenditure of money, and extra analyses, they are entitled to fair and reasonable remuneration, and beg to name, as a minimum fee, the sum of forty guineas, or, to each individual, of ten guineas.

"That your Memorialists beg furthermore to suggest, in case of remuneration for such services being limited to the sum already received, justice may often be retarded, in some cases defeated, by adopting the tedious and expensive process of engaging medical jurists at a distance, in consequence of the resident members of the profession declining ever again to undertake duties no less offensive to the operators than important to the community.—Your Memorialists therefore pray, that your Worshipful Bench will order the payment to them of the sum of forty guineas.

Signed, { ROBERT ELLIOT, M.D.,
JOHN MORTIMER, Surgeon,
EDWARD BOWMAN, Surgeon,
THOMAS ELLIOT, Surgeon."

June 30th, 1847.

The Chairman said he believed they had not power to entertain the subject; they could only reimburse the Coroner. When those gentlemen came up at the Assizes to give their evidence, he thought there would be a probability of getting an order from

the Judge for the amount, providing the Coroner would make affidavit, and give them his recommendation.

Mr. T. Elliott said, the Coroner had expressed his willingness to support the prayer of the petition.

Medical Intelligence.

ELECTION OF PROFESSOR GRAHAM IN THE ACADEMY OF SCIENCES.

On Monday, July 6th, the Academy of Sciences elected, for its corresponding member, in the room of the late Mr. Hatchett, Mr. Graham, Professor of Chemistry in the University of London. Mr. Graham obtained 35 out of 37 votes.

ELECTION OF PRESIDENT AND VICE-PRESIDENT AT THE ROYAL COLLEGE OF SURGEONS.

THE annual election of officers took place at the College on Thursday the 8th instant, when at a meeting of the council, Mr. Benjamin Travers, F.R.S., and Surgeon Extraordinary to the Queen, was elected President in the vacancy occasioned by the retirement of Mr. Lawrence; and Mr. Edward Stanley, F.R.S., Surgeon of St. Bartholomew's Hospital, and Mr. Joseph Henry Green, F.R.S., Surgeon of St. Thomas's Hospital, were elected vice-presidents of the College for the ensuing year.

MEDICAL APPOINTMENT.

DR. ALDIS has been appointed one of the Physicians to the Metropolitan Free Hospital.

THE SUCCESSOR OF LISFRANC.

DR. LAUGIER, Surgeon of the Hospital Beaujon, has just been appointed to the office of Surgeon of the Hospital of La Pitié, rendered vacant by the death of M. Lisfranc.

SMALL-POX IN THE METROPOLIS. PROPOSED REMOVAL OF THE SMALL-POX HOSPITAL.

THE half-yearly Court of the Governors of the Small-pox and Vaccination Hospital was held on Friday, July 2, Mr. Florence Thomas Young, Treasurer, in the chair. The reports of the house committee and railway committee were presented and read, whereby it appeared that small-pox has again become epidemic in London, 74 patients having been received in June, of whom 58 are now in the hospital, leaving only 12 unoccupied beds. The character of the disorder is mild, eight patients only having died during the last month. It also appeared that the governors had agreed for the sale of the

hospital and ground to the Great Northern Railway Company, and that the governors are engaged in selecting the site for a new hospital, adapted to the obviously increasing demands upon the resources of this valuable institution, the importance of which to the metropolis has been amply proved by four epidemics having occurred during the last 10 years. The demand for vaccination and the supplies of vaccine lymph to the medical profession, as well in town as in the country, have kept pace with the increase of numbers applying for admission within the hospital, 1,653 persons having been vaccinated at the hospital during the last six months, and 1,035 supplies of lymph gratuitously afforded to the medical profession during the same period. A hope was expressed that the patronage of the public would not be withheld from a charity contributing thus largely to the wants and necessities of the public.

* * The deaths from small-pox are much above the average of the season. They were last week 28 to a summer average of 14 (an increase of 100 per cent). It is worthy of note that 24 of these deaths occurred among children, and probably among the unvaccinated. The deaths from this disorder appear, according to the Registrar-General's table for the previous week, to have been entirely among those who were unprotected by vaccination.

THE ASTLEY COOPER PRIZE.

THE subject selected by the umpires for the year 1850 is "On the State of the Blood and of the Blood-vessels in Inflammation, ascertained by experiments, injections, and observations by the microscope."

NUMBER OF SURGEONS IN THE ROYAL NAVY.

ACCORDING to an official return just issued, there are at present in the Royal Navy 356 Surgeons and 238 Assistant-Surgeons.

EXPLOSIONS IN COLLIERIES.

A BILL has been just thrown out by the House of Commons, the object of which was to compel, for a limited period (until August 1848), the use of safety-lamps, and to prohibit the use of gunpowder, or other explosive materials, in all fiery collieries.

A well-conceived measure of this kind would be productive of much benefit.

FLOURISHING STATE OF THE MEDICAL COLLEGE OF BENGAL.

FROM the annual report of this excellent institution for the session 1846-47, it appears that the number of native students attending the surgical class amounted to 3,952, out of which great number, 3,589 were present at all the lectures during the session; in the anatomical and physiological class, 3,844

entered, out of which 3,430 attended every lecture; to the Practice of Medicine, 3,040 entered, and 2,765 also attended every lecture; the classes of Demonstrations, Midwifery, Chemistry, Botany, Materia Medica, and Medical Jurisprudence, were equally well attended. It is deserving of mention, that from the month of November, 1846, to that of March, 1847, being a period of only five months, nearly 500 bodies had been dissected by the native students,—an astonishing number, when the prejudices to be overcome are considered; and that the dissections and studies altogether at this College are properly conducted, is evidenced by the fact that the Hindoo students sent over to this country by the Government Council of Education under the able superintendence of Dr. Goodeve, underwent a very rigid examination at the College of Surgeons by the Court of Examiners, at the termination of which they were complimented by the president for their great proficiency. One of these gentlemen soon afterwards returned to Calcutta, the others remain in London prosecuting their studies at the University College, for the degree of B.M., London; the first examination for which they have already passed, obtaining "honours" on the occasion.

ETHERIZATION OF VEGETABLES.

M. CLEMENS, Professor of Natural Sciences at Vevay, in Switzerland, has ascertained experimentally that plants are as easily brought under the influence of ether as animals. He found that the stamens of *Berberis vulgaris* exposed to the vapour for one minute in the sun, and for three minutes in the shade, at a temperature of 59°, entirely lost their irritability, and this did not return until after the lapse of about half an hour. The *Wimosa pudica* was not completely etherized until after the lapse of eight or ten minutes in the sun, and a longer period in the shade. The plant remained in a complete state of insensibility (inirritability) for two hours. Of all the ethers the sulphuric and acetic were found to have the most powerful action.

FEVER HOSPITALS' BILL.

A BILL, brought in by the members for Finsbury, Messrs. Wakley and Duncombe, proposes to enact, "That whenever it is intended to build or open any hospital for the reception of patients afflicted with contagious or infectious diseases in any part of England or Wales, or to commence receiving such patients into any hospital which they have not previously been admitted, it shall be the duty of the trustees, or other persons by whose authority such hospital is intended so to be built or opened as aforesaid, to give public notice of such in-

tention, and to communicate the same to the Secretary of State for the Home Department; and no such hospital shall be built or opened for the admission of such patients as aforesaid, nor shall such patients be received into hospitals from which infectious and contagious diseases had previously been excluded in any part of England or Wales, until the Secretary of State for the Home Department has approved thereof, and stated his approval in writing; and such approval shall not be given until at least one calendar month after the giving of such notice of the intention to build or open such hospital as is hereinbefore directed; and if any such hospital be built or opened contrary hereto it shall be deemed to be a common nuisance." Although the bill contains only this one clause, it can scarcely be carried through both houses of Parliament before the dissolution. It doubtless has reference to the proposed removal of the Fever Hospital.

ABOLITION OF THE CONCOURS IN FRANCE.

THE Chamber of Peers has come to a vote by which the system of election by Concours in France is abolished. Some of the noisy advocates of this electioneering practice are about to present a protest to the Chamber of Deputies against this vote, and to require a restoration of their favourite panacea for bringing out professional talent! But the feeling of the most eminent and experienced men in the profession is decidedly against the re-establishment of this system.

A SANITARY MIRACLE.

THE French medical journals relate that a girl, who had been making a respectable income by showing herself as a "real negress," and had been under the treatment of several learned physicians in consequence of her skin constantly exuding a black perspiration, was recently seen by two physicians from St. Omer. On examining the black sweat which had hitherto puzzled the faculty, it appeared to them to be very much like a mixture of soot and oil! They prescribed baths and ablutions for the interesting young negress, with the result that the black perspiration entirely disappeared, and with it the income which the impostress had hitherto derived in her assumed character.

REMEDY FOR THE BITE OF A VIPER.

A QUACK at Mendicino in Calabria, had acquired a high reputation by the numerous cures which he had made in cases where persons had been bitten by a viper. The cure was said to be effected by some plant, but its name was kept a profound secret. A man named Librandi contrived to steal a portion, and with it he performed several cures. He brought a portion to M. de

Rose, who at once recognized the plant as the *trifolium lupinella*, a species of trefoil. M. de Rose tried it in three cases. Pasquale de Via, æt. 36, was bitten on the left hand, in July 1844. The part was immediately scarified. M. de Rose saw him six hours afterwards, and found the arm much swollen, the eyes and face yellow, and a general disturbance of the nervous system. The plant was applied bruised in the form of a cataplasm, twice daily, and the man was perfectly cured in a few days. The same results were obtained in the cases of two other persons who had been bitten, the one in the leg, the other in the foot, and in several other instances.

* * Is this another *post-hoc propter-hoc*? A small pamphlet is required in order to show how and in what way an inference can be fairly drawn respecting the curative powers of a new remedy in the practice of physic. Until such a pamphlet is printed, we commend to the careful perusal of all medical discoverers, Dr. Barlow's Address on the Application of the Inductive Philosophy to Medicine, published in our last volume.* It is an excellent summary of the true method of research to be pursued by those who wish really to improve medical science and practice.

TREATMENT OF EPIDEMIC TYPHUS IN FRANCE.

It appears that typhus fever in a severe form had become epidemic at Givet, and M. Scoutetten was sent to examine the cases and to endeavour to arrest its progress. The disease was especially prevalent among the patients of the Military Hospital. M. Scoutetten had them carried to an elevated spot, and the result was that the epidemic speedily abated and the patients became convalescent. —*L'Union Médicale*, 6 Juillet.

DR. LAYCOCK AND MR. HUDSON.

We are authorised by Dr. Laycock to state, in answer to the charge recently made against him in the House of Commons by Mr. Hudson, that he did not at any time make an application to that gentleman to procure for him a vote of thanks for his researches into the Sanitary Condition of York.

ROYAL COLLEGE OF SURGEONS.

GENTLEMEN admitted Members, on Friday, July 9th.—H. P. Harris—L. Truefitt—J. Tudor—J. Ragers—J. Farmer—J. Burdon—H. T. Barnett—J. Fayner.

Fellowship of the College.—The next examination for the "Fellowship," will take place on Tuesday and Thursday, the 3rd and 5th of August.

APOTHECARIES' HALL.

NAMES of Gentlemen who passed their Examination and received Certificates to Practice, on July 8.—William Henry Cook, Surrey—Edmond Archer, London—Michael Hoole Ashwell, Longton, Staffordshire.

OBITUARY.

M. PARISET.

RECENTLY, in Paris, in the 77th year of his age, M. Pariset, Perpetual (!) Secretary of the Royal Academy of Medicine. The deceased had obtained a high rank as a scientific and professional man.

M. CASIMIR BROUSSAIS.

M. CASIMIR BROUSSAIS, Chief Physician of the Hospital of Gros Caillou, has just died in the 44th year of his age. He was buried on the 7th inst., with the honours usually shown in France to men of high rank in the medical profession.

MR. W. H. LEREW.

On Saturday, the 10th inst., at the house of his son, Paddington, William Hopeful Lerew, Esq. Surgeon, aged 57.

Selections from Journals.

FORENSIC MEDICINE.

ON THE NATURE AND CAUSE OF CADAVERIC RIGIDITY. BY M. FOUQUET.

THE true cause of the rigidity which the muscular tissue of the animal body undergoes shortly after death, and by which the stiffness of the limbs is produced, has long been the subject of much discussion and of contrariety of opinion among physiologists. The various circumstances relating to this phenomenon, and the theories offered in explanation of them, have been recently reviewed by Dr. Fouquet* in a long and somewhat interesting paper, the principal purport of which is to prove that this cadaveric rigidity may be regarded as a certain sign of death. This is a point of considerable importance, especially in relation to medico-legal inquiries; but Dr. Fouquet is by no means the first observer by whom the value of this phenomenon, as a sure proof of the complete cessation of life, has been insisted on.†

As remarked by Dr. Fouquet, cadaveric rigidity probably never fails to appear,

* *Gazette Médicale de Paris*, 3 Avril, 1847.

† A full discussion of this subject, in relation to medical jurisprudence, will be found in Mr. Alfred S. Taylor's lectures: *Med. Gaz.* vol. xxxvii. p. 136-8.

sooner or later, after death: examples have been given in which this phenomenon was said to be absent; but it is questionable whether in such cases a very accurate observation has been made. Even the statement of Mr. Hunter, that the rigidity does not occur after sudden death from violent causes, such as lightning or electricity, blows on the stomach, excessive mental emotion, has not been confirmed by subsequent observations: indeed, in some instances of death from such causes it has been clearly disproved. It was remarked by Bécclard, that the foetus whilst immersed in the liquor amnii does not become rigid; but M. Ehnmann, having examined the pregnant uterus of a woman directly after death, found the foetus therein in a state of well-marked rigidity. In the cases observed by Bécclard the examination had therefore probably not been made until after the rigidity had passed off, and thus was an inaccurate conclusion drawn, which has since been adopted by many as truth.

After examining some of the other conditions which have been said to prevent the occurrence of rigidity, and shewing that the effects of such conditions have been wrongly estimated, Dr. Fouquet proceeds to investigate the respective merits of the two principal theories which have been advanced in explanation of the cause of this rigidity of the muscular tissue after death. The first of these theories is the one offered by Nysten, according to which the rigor mortis is the result of a true vital contraction of the muscular fibre. That the contraction cannot be one dependent on the mere physical contractility of the muscular tissue, Nysten considers to be proved by several circumstances, especially by the fact that when the rigidity of a part, such as a limb, is once overcome by forced flexion or extension, it is not reproduced, which it would be were it the result simply of a physical contractility of tissue. Nysten concludes, therefore, that the post-mortem rigidity is the result of the last act of vitality of the muscular tissue (just as coagulation may be regarded as the last vital act of the blood), and that this phenomenon is produced at the moment "in which life, on the point of being extinguished, seems to take refuge in the muscle and to produce in them a spasm, which constitutes rigidity." A somewhat similar opinion has been entertained by most writers on the subject since Nysten's time, many of whom quote Nysten's expressions as conveying a full idea of the true nature of cadaveric rigidity. Dr. Fouquet, however, is opposed to such a view, and ridicules the idea of life locating itself in the muscular tissue as its last stronghold previous to quitting the body. He cannot conceive what, in accordance with this view, should

prevent the admission that the life which has taken refuge in the muscles may be recalled to its former occupation of the whole body. He inquires with much apparent reason why, if cadaveric rigidity be an act of vitality, it does not manifest itself immediately after the cessation of the ordinary phenomena of animal life, such as respiration, circulation, and the voluntary movements, instead of sometimes waiting so long as six, twelve, and even twenty-four hours before it makes its appearance? Why also it shews itself only when the body has ceased to exercise movements under the influence of galvanism? And why its appearance is so tardy in cases of sudden death, of death from asphyxia, and under all those circumstances in which, before death, the vital phenomena possessed their full integrity and energy, whilst it occurs so promptly after chronic cachectic affections. He thinks that Nysten's idea of the life taking refuge in the muscles, is insufficient to explain why the impression of a few movements, or of a slight handling, on a rigid muscle, overcomes this rigidity and prevents its reproduction. Neither does it explain how it happens that the body of a hemiplegic person, in whom during life there was no voluntary power over the paralysed muscles, should a few hours after death present the phenomenon of rigidity in equal intensity in all its limbs. [It must be remembered, however, in regard to this latter point, that the inability to excite a voluntary contraction of the paralysed muscles is dependent on a morbid condition, not of the muscles themselves, but of some part of the nervous system from which the stimulus to action of these muscles should be derived, or along which it should be conveyed. The muscles themselves in most, especially early, cases of paralysis, are quite healthy, and in a perfect condition for action, as is shewn by their answering to the stimulus of galvanism; but from some defect either in the originators or the conveyers of the nervous influence, whereby their action is ordinarily excited, they receive not their natural stimulus, and therefore remain motionless. When the death of the body ensues, therefore, the muscles of the paralysed side are left in the same condition as those of the healthy side, and like them are similarly exposed to the influence on which rigidity depends, and are similarly affected thereby. Dr. Fouquet indeed has rather over-strained the idea entertained by Nysten concerning the cause of the cadaveric rigidity. The view of this latter pathologist seems rather to have been, that the rigidity is dependent on the vitality, or, as he names it, "the insensible organic life," of the muscular tissue itself, and not on the influence of a principle

of life escaping from some imaginary spot of the body and taking refuge in the muscles.]*

The other view which has been advanced in explanation of cadaveric rigidity is, that it depends on the coagulation of the fibrinous part of the blood contained within the muscular tissue. This supposition has met with many supporters, and, with some modifications, is favoured by Dr. Fouquet. The principal objections which, according to Dr. Fouquet, have been urged against this view are, first, that a considerable degree of rigidity occurs before complete coagulation of the blood; this objection Dr. Fouquet meets by the observation, that although the fact is true, yet the rigidity becomes more marked when the process of coagulation is complete. Secondly, that the blood is often found fluid in persons and animals after death from drowning, or from poisoning with hydrocyanic acid, in whom, however, cadaveric rigidity is well marked. In answer to this objection, Dr. Fouquet observes that although the blood in drowned persons and animals may be found fluid in the large veins, yet that this is no proof that it is deprived of fibrine or that it is fluid in the capillaries. With regard to the action of hydrocyanic acid, his experience does not enable him to make any remark.

Having thus satisfactorily, as he supposes, set aside the objections which are offered to the view that cadaveric rigidity is closely connected, in the relation of cause and effect, with coagulation of the blood, Dr. Fouquet proceeds to offer the following remarks which, in his opinion, shew clearly that this rigidity is in close relation with the fibrinous condition of the blood. 1. All experiments on the subject have shewn that cadaveric rigidity is invariably well marked after death from asphyxia, detraction, and acute diseases: circumstances in which, at the moment of death, the blood is in its normal condition, and has undergone no change in its constituent principles. 2. This rigidity is on the contrary less marked when the individuals die after diseases of long duration: it is especially slight after typhoid, scorbutic, cachectic affections, "in which," as observes Nysten, though without drawing any conclusions therefrom, "the humours are in dissolution," and in which, it may be added, the blood is always deprived of its plastic elements. 3. After hæmorrhages which are rapidly fatal, rigidity is well-marked: but after hæmorrhages which are small in quantity, and fatal only after being frequently repeated, it is slight. On what depends this difference? Evidently on this, that in the former case although there may be a little less blood left in the

body, yet its nature is not altered; whilst in the second case the blood is more serous, and its principles are no longer the same, for according to all observers on the subject it has undergone a diminution in the quantity of its coagulable material. 4. As was correctly observed by Nysten, the rigidity is very intense in animals killed by the injection of insoluble gases into their veins, whilst it is much less marked when sulphuretted hydrogen is the gas used. The different action of these gases may be explained by considering the insoluble gases as having no influence on the intimate composition of the blood, whilst sulphuretted hydrogen has the property of altering its fibrine. 5. Although the rigidity is ordinarily slight in individuals who die after adynamic affections and diseases of long duration, yet it sometimes happens that it is very considerable in cases of this kind. At first sight such a circumstance would seem to offer a weighty objection to the view that the rigidity is in close relation with the fibrinous condition of the blood; but, on further examination, it will be found not to be so. Thus it was observed by MM. Andral and Gavarret that every inflammatory affection has, as its consequence, the production of a certain quantity of fibrine. In all those cases, therefore, in which, after death from chronic affections, scurvy, adynamic fevers, and such like, a considerable degree of cadaveric rigidity is found, it may be assumed that an acute inflammatory affection had seized on one or more important organs of the body before death.

The conclusion which Dr. Fouquet considers may be drawn from the above remarks, and from the investigations of other observers on the subject, is that in all those cases in which the cause of death has not induced any changes in the constituent elements of the blood, such, as for example, acute disease, asphyxia from non-deleterious gases, rapidly-fatal hæmorrhage, detraction, apoplexy, and the like, the cadaveric rigidity is always strongly marked; whereas in asphyxia from certain other gases, sulphuretted hydrogen for example, in cachectic, scorbutic, and putrid affections, in which the fluids of the body, especially the blood, are vitiated, this rigidity is developed only in a very feeble degree. And he regards this as strong evidence in favour of the view that the stiffening of the muscles after death is to be attributed to coagulation of the fibrinous principle of the blood. He then endeavours to reconcile the various circumstances attending the commencement, progress, and duration of the cadaveric rigidity with this view. The final disappearance of the rigidity he considers to be due solely to the occurrence of putrefaction, which disarranges and destroys the particles

* See his remarks on the subject: "*Recherches de Phys.; et de Chimie Pathol.* 1811, pp. 402-3.

of fibrine by which the stiffening was produced. Whatever, therefore, retards putrefaction favours the continuance of the rigidity, and whatever hastens the appearance of this process, puts an end to rigidity.

[Although it is very probable that the blood contained within the capillaries of the muscular tissue, and the fibrinous part of this fluid effused for the purposes of nutrition in the interspaces between these vessels, may by their coagulation contribute in some measure towards the production of that stiffening which the muscular tissue undergoes after death, yet that this coagulation is the essential and sole cause of such muscular rigidity is a supposition manifestly erroneous. Setting aside the improbability that the mere physical effect of coagulation would be sufficient to produce the firmness and solidity possessed by a rigid muscle, it may be rendered quite certain that the real cause of cadaveric rigidity is an actual contraction of the elementary muscular fibres, apparently comparable in all essential respects with that contraction which characterises the action of this tissue during life; with the one exception however, that the post-mortem contraction does not take place until the irritability of the muscular fibre has ceased to manifest itself by answering to stimuli. Microscopic examination of a rigid muscle, for example, has clearly shewn that the elementary particles of the fibre are approximated towards each other, just as they are observed to be in a living muscle contracting under the influence of stimuli. A muscle, if free to contract, as when unattached at one or both its extremities, is also observed, as it becomes rigid, to shorten and at the same time increase in thickness, an effect which can scarcely be supposed to result from coagulation of fibrin within its tissue. The same is shewn in the rigidity which involuntary muscles also undergo. The appearance presented by a rigid heart, which exactly resembles that of an actively contracted heart during life, could not be produced by the mere coagulation of fibrine within the tissue of the organ. These, and other circumstances which might be mentioned, leave no doubt that although the coagulation and contraction of the fibrine of the blood or liquor sanguinis, within the tissues of muscle and other parts, may assist in producing the general stiffening of the body after death, yet that the essential cause of the true cadaveric rigidity, which is now universally admitted to be seated in the muscular tissue, is due to an actual contraction of the elementary fibres of which the structure of this tissue is composed.]

TOXICOLOGY.

CASES OF POISONING BY OPIUM TREATED SUCCESSFULLY. BY J. KIRBY, ESQ.

Ambulatory Treatment—Frequent Cold Dashing.

I was called from bed to see a young gentleman who was in my parlour, and who was said by my servant to be in a state of intoxication. He was not drunk, but was under great excitement, and in great alarm. He told me he supped heartily on oysters, and drank three tumblers of punch, "to nerve himself up to taking an ounce and a half of laudanum, which he had just swallowed at a neighbouring tavern." He lamented his rash proceeding, implored for help, and prayed with maniacal fervour. I instantly administered a full dose of sulphate of zinc, which in half an hour induced profuse vomiting. After a little rest he became drowsy. I now gave him in charge to two pupils to walk with him to his residence, distant about a mile, whither I followed with the stomach-pump as quickly as I could. On the way, he frequently vomited, and was so greatly disposed to sleep, that they were obliged to drag him along. He was now like a drunken person, flushed and drowsy, but with a quick pulse, and he could not stand without support. On being roused, he answered sulkily, but coherently. His pupils were dilated, but they contracted on a near approach of light. As the stomach was pretty well evacuated, and he was still sick, I did not use the syringe, but I adopted the ambulatory plan of treatment in the open air, with occasional dashing of cold water. This course was pursued until morning, when his gait grew firmer, his mind more collected, and the somnolency became less. He was now permitted to rest himself for a short period, while sleep was arrested by a constant application of various external stimuli. In about eight hours he had some coffee, and was put to bed, when he slept soundly and naturally for twelve hours. For a few days he complained of weakness and fatigue, making some mention of pain at the stomach, and heart-burn, which soon ceased after a dose of magnesia and rhubarb.

Ambulatory Treatment—Cold Dashing—Recovery.

Late one evening in summer I was hurried to see a young gentleman in B—Street, under the following rather romantic circumstances:—Being rejected by a young lady to whom he was paying his addresses, he contrived to get into her bed-room, situated over the drawing-room, where all the family were assembled. He undressed, lay down in the bed, and drank off an ounce and a half of laudanum, upon which he flung

the phial so violently across the room that many persons soon hurried into the apartment alarmed. I was promptly in attendance. I was not prepared with a pump, and consequently I administered the zinc emetic in full dose. He was in awful terror, and therefore swallowed the medicine with great avidity. He soon vomited about a pint of coloured fluid, which had a strong odour of laudanum. Large quantities of tepid water were occasionally administered, and vomiting was thus kept up until the contents of the stomach were colourless and free from both the odour and the taste of opium. During this discipline he was kept in motion, by which vomiting was promoted, and he was well drenched with cold water. In four hours he was put to bed; he slept eight hours, and awoke, feeling tolerably well, but fatigued.—*Dublin Medical Press.*

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, July 3.

BIRTHS.	DEATHS.	Av. of 5 Sum.
Males.... 643	Males.... 484	Males.... 479
Females.. 634	Females.. 449	Females.. 461
1277	933	940

DEATHS IN DIFFERENT DISTRICTS.

West—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	122
NORTH—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 366,808)	192
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	153
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 393,247)	213
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich .. (Pop. 479,469)	253
Total	933

CAUSES OF DEATH.

CAUSES OF DEATH.	Av. of 5 Sum.
ALL CAUSES	933
SPECIFIED CAUSES	931
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	190
<i>Sporadic Diseases, viz.—</i>	
2. Dropsy, Cancer, &c. of uncertain seat	125
3. Brain, Spinal Marrow, Nerves, and Senses	115
4. Lungs and other Organs of Respiration	239
5. Heart and Bloodvessels	34
6. Stomach, Liver, and other Organs of Digestion	86
7. Diseases of the Kidneys, &c. ..	9
8. Childbirth, Diseases of the Uterus, &c.	7
9. Rheumatism, Diseases of the Bones, Joints, &c.	3
10. Skin, Cellular Tissue, &c.	8
11. Old Age	42
12. Violence, Privation, Cold, and Intemperance	73

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	23	Convulsion	23
Measles	26	Bronchitis	32
Scarlatina	16	Pneumonia	36
Whooping-cough ..	23	Phthisis	147
Typhus	61	Dis. of Lungs, &c. ..	11
Dropsy	9	Teething	11
Sudden deaths ..	30	Dis. Stomach, &c. ..	9
Hydrocephalus ..	18	Dis. of Liver, &c. ..	14
Apoplexy	24	Childbirth	4
Paralysis	14	Dis. of Uterus, &c. ..	3

REMARKS.—The total number of deaths was 7 below the summer average. This week we enter upon the summer quarter in the Registration returns. It will be observed that the average weekly deaths are a little above those of the spring quarter (940 : 914). If we except the prevalent mortality from typhus fever, which has increased 100 per cent., the metropolis may be considered in a healthy condition.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	30.1
“ “ Thermometer	61.3
Self-registering do. max. 100° min. 44°	
“ in the Thames water — 67° — 61.2	

From 12 observations daily. Sun.

RAIN, in inches, '02: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was about the mean of the month of July (61°).

NOTICES TO CORRESPONDENTS.

The cases forwarded to us by Dr. Ross, of Cambrusmore, will be inserted.

We are obliged to Dr. Fuller for his communication. It shall have early insertion.

The first part of Dr. Adams's paper on the Construction of the Placenta will, if possible, appear in the following number.

Mr. H. L. Smith.—Our pages are at present so occupied that we are unable to find room for the letter.

The writer of the letter on “The Claims of Idiots,” inserted in our last number, will confer a favour on a correspondent, who takes an interest in the subject, by forwarding his address.

The resolutions passed at a recent meeting of medical officers at Halifax reached us too late for notice in the present number.

Dr. Soltan's communication on Delirium Tremens has been received.

Lectures.

COURSE OF SURGERY.

Delivered in the years 1846 and 1847,

By BRANSBY B. COOPER, F.R.S.
Surgeon, and Lecturer on Surgery at Guy's
Hospital.

LECTURE VI.

HYDROPHOBIA.

Idiopathic only in carnivora—Inoculable in herbivora—Inoculable in man—Symptoms of rabies in a dog—Insensibility to pain—Period of infection after bite in dog—Post-mortem examination—Inflamed mucous membrane of organs of deglutition and digestion—Period of infection in man—Symptoms in man—Preventive treatment—Cautic—excision—Excision not right in all cases of bites from a dog—Doubts of some as to the specific poison of rabid animals—Query as to inoculation without abrasion—Constitutional remedies, inefficacy of—Post-mortem examination most unsatisfactory.

Of all the diseases to which the human frame is liable, there seems to me none so appalling as the effects produced by the bite of a rabid dog: not, however, that the disease is confined to dogs, for wolves, foxes, and cats, are also supposed spontaneously or idiopathically to be affected by, or to generate, the disease, as if they had a peculiar idiosyncrasy rendering them liable to its development. Neither is rabies confined to carnivorous animals, for cattle, and even birds, are capable of being contaminated by this animal poison, when inoculated by the bite of rabid carnivora, although it is believed they never generate the disease; and some doubt is even thrown upon their power of communicating it to others, although it may prove destructive to themselves. Man has never been known to communicate the disease to another. A dog affected with rabies shows certain indications of the disease which it is well for you to be acquainted with, that you may regulate the treatment of a person who has been bitten by a dog supposed to be rabid. Every precaution should be taken to secure the animal, and to watch his habits, that you may either prove to your patient his perfect security from contamination, or, on the other hand, while you conceal from him your suspicions, you may employ every means in your power to prevent the influence of the poison. The early signs of madness in a dog are very obscure, and it is far from an invariable symptom that he shews a horror of lapping water or other fluids, which is generally considered so essentially pathognomonic. He may be generally known by his peculiar appearance and gait, presenting, indeed, such an unnatural manner as to attract attention. You will observe him continuing his course onwards, as if he had no motive in his progression, with his head and tail hanging down, looking half ashamed of himself. He seems to take but little notice of anything which does not offer an hindrance to his course, but at each obstacle of his obstruction he snaps, and continues his way. If he raises suspicions from these appearances, and is tied up, he will become extremely restless, hardly sleeping for an instant. Perhaps obedient to his master's voice for a short time, and shewing the usual signs of recognition, he will suddenly snap at him, or anything near him, or even at the air. He devours his own excrement, licks up his own urine, stares suspiciously around him, and moves from place to place as far as his chain will permit him. When he barks his voice is quite altered; his eyes suffused and red; his mouth covered with thick saliva; his tongue swollen and dry; his countenance most painfully distressed and anxious; his hind quarters drooping; his consciousness begins to fail him; he mutters growling snarls, seems as if dying, then starting up at some supposed object of terror he bites at it, and falls exhausted. Another and another paroxysm attacks him, each weaker than the other, and at last worn out, he dies. It is said that while dogs are in a state of rabies they are quite insensible to pain, and instances are given of mad dogs seizing a red hot poker and holding it in their mouths until dreadfully burnt.

Youatt says the earliest period at which he has known rabies to occur in the dog after being bitten was fourteen days, and supposes the average time to be between five and six weeks, but he has known it come on as late as seven months after inoculation.

Upon a post-mortem examination the mucous membrane of the mouth and fauces is found inflamed; the tongue discoloured and swollen, congested with blood, and the papillæ at the posterior part very much raised, and generally covered with straw and other indigestible matters which the animal has attempted to swallow. The stomach is also found to contain some such extraneous matters as small pieces of wood. Its mucous membrane and that of the œsophagus and pharynx is inflamed and studded with

spots of ecchymosis. But, in fact, nothing has been ascertained to throw any light upon the pathology of this disease. The inflamed state of the mucous membrane of the stomach and organs of deglutition is considered as pathognomic of hydrophobia, as in the same way ulceration of the coats of the stomach is indicative of poison by arsenic, even though it be injected into the veins of an animal; but it is yet a question if the inflammation in hydrophobia is not to be attributed to the secondary effect of the altered function of the nerves, and spasmodic contraction of muscle, rather than to the primary influence of the poison. A dog, and it is supposed any other animal suffering under the symptoms which I have described, is capable of producing the disease in the human subject by inflicting a wound with his teeth; and, it is supposed, even by applying his saliva to any part of the body. I should doubt, however, whether rabies could occur unless some abrasion of the skin had been coincident. But it is useless to dwell upon the various opinions on this subject. The period at which the symptoms occur after the inoculation of the poison in the human subject varies from twenty days to as distant a period as eighteen months: it is said Mr. Cline had a patient under his care suffering from hydrophobia, who was attacked exactly on the three hundred and sixty-sixth day after he had been bitten. It is enough for you to know, gentlemen, that lengthened periods occur before the symptoms are noticed, and that this period has been called by scientific writers the period of incubation; so also have they given a technical term to the commencement of the symptoms, under the name of recrudescence.

The symptoms which occur are usually in the following order:—a pain is first felt in the seat of the original wound; the cicatrix feels stiff, numb, and sometimes cold, and there is a tingling sensation in the limb affected. The original wound not unfrequently becomes hot and throbbing, the cicatrix opens, and discharges a sanious or ichorous effusion. The patient experiences usually at this period extreme depression of spirits, and without the expression of any positive suffering, describes a feeling of dread, and the conviction that some awful calamity will befall him: this mental depression seems even to haunt those who, although affected, have no suspicion or dread of hydrophobia. The peculiar symptoms of the disease now begin to develop themselves: a stiffness about the neck and throat is complained of; the patient becomes hurried and irritable in his manner; speaks of a difficulty and dread of attempting to swallow, the very thought of which produces a spasmodic paroxysm. A breath of air, the slightest noise, the agi-

tation of fluid, each induces an aggravation of symptoms, and his mental powers now begin to be impaired. Although at lucid intervals he warns the medical attendant not to approach him too closely, perhaps the next moment, in sudden rage, he may attempt to bite him, or spit at him, and then apologises for the offence he has committed. Such symptoms soon exhaust the patient; and, worn out by the frequency of his paroxysms, he is rarely capable of sustaining the constitutional shock beyond from twenty-four to seventy hours, when he sinks under the disease.

As prevention is always better than cure, I will now speak to you of the plan which should be adopted when you are called upon to visit a person who has been bitten. If there be reason to suspect that the dog was rabid, or even when there are no means of ascertaining the actual condition of the animal, the part should be immediately excised; and, to be certain that the whole extent of the poisoned surface is removed, Mr. Hunter recommended that a probe should be passed to the very depth of the tooth-impression, and the knife passed behind it, so as to remove the probe and flesh together. Sometimes, however, this may be impracticable, from the vicinity of large vessels, in which case the knife should be used as far as it is safe, and caustic applied to the rest of the surface. I believe it would be still better to apply the caustic even before the knife is used; and, if injected in solution, it would be sure to penetrate to the very bottom of the wound, and, by the change of colour, form a good guide to the surgeon for the certain excision of the whole; while, at the same time, it would render abortive any of the virus that might be left in the wound, and so prevent its contaminating the blood that flowed in consequence of the operation.

If such treatment be adopted immediately after the bite, there can be but little fear of future ill effects. It is supposed by some that this operation may be beneficially performed at any period prior to that of recrudescence, as it is believed that the constitution is not generally affected until the period of incubation is completed. I should doubt, however, that much reliance is to be placed upon this view. If a person be bitten by a dog under such circumstances that there is no reason to suspect his being in a rabid state, but if there be, on the contrary, a thorough conviction that the bite was one of just retaliation on the part of the dog, I should not recommend the extirpation of the wounded part, for the performance of the operation implies the surgeon's fear of contamination, and can but impress his patient with all the horrors of impending danger. Besides, the very

excision may lead to a high degree of constitutional irritation in excitable people, and incur a risk beyond what the case justified. Only yesterday, a pupil consulted me, who had been bitten by his favourite dog, but under an aggravation which rendered it a natural result; he flogged the dog, which ran under the bed, when, laying hold of him to pull him from his hiding-place that he might continue his punishment, the dog bit his fingers. In this case, as the habits of the animal remained unaltered, and as he had lived with his master two days after, manifesting his natural docility, I would not remove the bitten part, particularly as I had reason to fear, from the constitution of the patient, that I should thereby inflict a greater injury on him than he had already sustained.

It is curious that some people have doubted the specific poison from a rabid animal, and have attributed all the symptoms which arise from the bite of a dog to the influence of the imagination of the patient, inducing a degree of madness from the impression made upon the nervous system. Others have thought that the bite of a sound dog in a state of excessive rage, as while fighting, was capable of producing the symptoms of rabies. And, indeed, there would seem to be some reason in this supposition, as there are cases on record of persons having died from the bite of a dog which itself has not died of hydrophobia. But, on the other hand, as it never happens that fighting dogs die rabid, even after lengthened conflicts, no weight can justly be attached to this supposition. As to the question of the possibility of the disease being communicated without abrasion of the skin, it is a matter scarcely worth consideration; but, in fact, experience resulting from experiments seems to overthrow the supposition. I have seen two cases of hydrophobia myself, and in both of them the most marked symptom was the intolerance to anything like undulatory motion in the air; even the motion of the water when offered them to drink seemed rather to produce the paroxysm than the effort made at deglutition.

There are various preventive medicines which have had, in their time, a high prophylactic character, but little or no reliance can be placed upon them, and certainly they should never supersede the excision of the part.

Hydrophobia treated with morphia.

Edward Lynch, an Irishman, æt. 26, was admitted into Billet Ward, under Dr. Babington, on Sept. 26th, 1837.

About five weeks before admission, a dog, whom he had been thrusting at with a pitchfork, sprang at him, and bit his

upper lip and cheek. He immediately seized the animal and strangled it with a hay-band. The bitten part of the lip was speedily excised, but not that of the cheek. Nothing material followed till Saturday, the 23d of September, when, after drinking two or three quarts of beer, he was taken with a fit of vomiting, and experienced great distress at the sight of some fresh meat.

On Sunday he was very unwell, but had no spasm; and in the afternoon he was into a deep sleep, from which he was with difficulty awakened. On Monday morning spasms came on, and he became worse.

On Tuesday, at 9 A.M., he was admitted into this hospital. On admission his condition was as follows:—He had no pain anywhere, but experienced great lassitude and a sense of constriction about his throat. He took a table-spoonful of milk, but could drink no water. His voice was feeble, and resembled a loud whisper. The countenance was anxious, and he was spasmodically affected at the approach of any one, when, also, he appeared choking. Heart's action normal; pulse soft, irregular, and 60; tongue slightly coated, but moist; skin natural; his breath was of an acid odour, and every two or three minutes he was seized with violent sighing. At a quarter before 10 A.M., he had a turpentine injection administered. At 1 P.M. Dr. Babington saw him, and ordered Ferri Sesq. Ox. 3j.; Syr. Aurant. q. s. ut fiat bolus, to be taken every quarter of an hour. Also the spine to be rubbed with Tr. Lyttæ, and belladonna plaister to be afterwards applied to the stimulated part.

At half-past 2 he sunk into a sleep, which lasted three-quarters of an hour.

At 5 P.M. he was much prostrated, and the spasms were increased. Pulse 54, irregular, and intermittent. He experienced the feeling of a ball rising in his throat. His urine, which he passed three or four times, was rather high coloured.

At 7 P.M. he was more restless. Mouth parched; skin hot and dry; pulse 64. The boluses were divided into three parts, and after each he took about two ounces of milk, the only nutriment taken since his admission. He has great difficulty in swallowing, and is very much convulsed.

At 10 P.M. his pulse was 54, but rather fuller; he could bear no light in his room, nor any one to approach him except his wife. His voice was natural, and he had no rigidity of muscle. He was ordered Morph. Hydrochl. gr. iij. every half hour till some effect should be produced. Unguent. Lyttæ was rubbed in over his chest about the region of the diaphragm, and afterwards belladonna plaister. He soon became more quiet, and slept from 11 till 3. He passed a quiet night upon the whole, crying out at

intervals. At 5 A.M. Sept. 27, he felt rather sick. He asked for a cup of milk, but swallowed it with difficulty. The bowels had not been open since his admission. The morphia was repeated.

At 8 P.M. he asked for some water, swallowed about two ounces, but immediately jumped up in bed and appeared choking. The morphia was repeated.

At 10 P.M. he was very violent and delirious. Pulse 120. He wished for water, but could not swallow it. Dr. Babington ordered the Morph. Hydrochl. to be increased to four grains every half hour. He was confined to his bed with sheets.

12 P.M.—He still cries for drink, which, when taken, makes him sick. Pulse 144. The voice is thick. Breathing more laborious, and feeling of depression much increased. He displays no greater horror of fluids than of solids. Dr. Babington ordered the dose of Morph. Hydrochl. to be increased to eight grains every half hour, and a tobacco enema to be given immediately.

About 2 o'clock the countenance was livid, and the angles of the mouth constantly raised and lowered. He made a noise like the howl of a dog. He breathed only eight times in a minute. Pulse small, 180. Occipito-frontalis contracted. He appeared unconscious, but now and then a calm smile played upon his face, as though his ideas were of a pleasing nature. The pupils were much contracted, and inobedient to the stimulus of light. Conjunctiva injected. He twitched the bed-clothes, and pulled his neck about. From this time he gradually became worse till twenty minutes past 3, when he died. Immediately after death his pupils were very dilated, and the corpse had a very cadaverous odour. A vein was opened, but did not bleed. The next morning, however, he was deluged in blood. He took altogether forty-eight grains of Hydrochlorate of Morphia.

Hydrophobia treated with Lead.

Samuel Soring, a Londoner, æt. 35, was admitted into Billet Ward, under Dr. Addison, on the 1st October, 1837. He had formerly been addicted to drinking, but not of late years. For the last three weeks he had been in a desponding mood, so much as occasionally to confine him to his bed for a day or two, though he continued his employment, which was fish selling. About three months since he had been bitten by a spaniel. The wound was trifling, did not bleed, and caused only slight pain. On the day before his admission he was very ill, and spent a very restless night. His symptoms on admission were—An anxious and dejected countenance; breathing difficult and convulsive, and this more violent after any

movement, draught of air, or sight of water; pulse 80, with little power; skin natural; tongue parched; great thirst; slight pain in the head; pupils contracted; bowels not opened since yesterday morning; a sense of suffocation and tightness across the throat. At half-past 10 A.M. Dr. Addison saw him, and ordered him to be cupped over the epigastrium. The cupping caused so much excitement that when eight ounces had been drawn it was thought advisable to desist. Ordered also, Haust. Sennæ c. Ext. Col. c. ʒi. as an injection, and two drops of Croton-oil to be taken every half hour till it operated. The enema was soon returned, with a small quantity of faeculent matter. He swallowed his medicine with great difficulty, wishing to have his eyes closed while taking it. A composition of Ext. Belladon. ʒij. and Ung. Hyd. ʒj. was rubbed on his throat. At 3 P.M. Dr. Addison again saw him. The croton-oil had acted powerfully, the stools watery and green; skin cold and wet; pupils dilated; urine scanty, and priapism present; purging still violent. Ordered Vin. Opii ʒj. statim, and Liq. Plumb. Diacet. ℥xl. every hour. The purging ceased shortly after taking the opium. At 10 P.M. Dr. Addison again saw him. After the first three doses of the lead he seemed more tranquil. He now complained of great thirst, and drank eagerly two half pints of porter. He still went on regularly with his medicine, which he was persuaded to take with great difficulty. He was constantly troubled with violent emotions, which became worse after each dose of the medicine.

At half-past 2 A.M. of the following day he was much worse. He appeared greatly distracted, imagining himself surrounded by hideous objects. It was necessary to confine him to his bed, as he would not stop there without compulsion. After this he became unconscious of everything around him. He roared in a most awful manner. The muscles of his face were horribly distorted. A large quantity of frothy saliva poured from his mouth, his lips became livid, and he appeared writhing in an excess of agony. In this state he remained till half-past 4, when he became suddenly quiet, and he appeared quite exhausted. Five minutes afterwards he was dead.

Hydrophobia treated with prussic acid.

Emmanuel Soult, aged 7, was admitted into King's College Hospital, under Dr. Todd, on the 22d of November, 1841. Two months before admission he had been bitten by a mad dog under the right eyelid. The wound bled profusely, but rapidly cicatrized, and no constitutional disturbance was manifested till the day preceding his admission. He then exhibited a strangeness of manner

and slight symptoms of pyrexia only, until, a few hours after his illness had commenced, he suddenly threw himself into his mother's arms, and screamed loudly. His eyes were bright and prominent, he frothed at the mouth, and his inspiration was jerked and audible. He tossed his arms about, and tried to vomit: refused to eat, drink, or lie down, but did not object to the presence of water. At night the symptoms were the same, but exaggerated; and on the following day after his admission into the hospital, there was observed spasmodic twitching of the muscles of the face, neck, arms, and larynx. He vomited saliva and viscid mucus. Over the chest was heard a loud mucous-sonorous râle. The pulse was small, and 140. The skin was dry, but not hot. The tongue was maintained protruding from the mouth; there was also some intolerance of light. Pressure on the cicatrix of the wound did not occasion pain, nor was it red or swollen. The lower lip, at its right angle, was very tumefied, which his mother referred to his having bitten it. He evinced great sensibility to draughts of air, requesting those who spoke to him not to blow upon him.

At a quarter to 4 P.M., by Dr. Todd's order, five minims of hydrocyanic acid (Ph. L.) were placed on the tongue. At 4 o'clock, the spasms being frequent, and the retching violent, the acid was repeated in the same quantity, and was continued every quarter of an hour till 5 o'clock. After the second dose he seemed better: he was more quiet; retching less frequent; and he passed water in bed copiously, and was sensible of its escape. This state lasted till 4 to 5 o'clock, when he again, on the entry of several persons into his room, became excited. The spasms returned with increased violence, there being at one time slight opisthotonos. The retching was more constant, and he could no longer lie down. At 5 o'clock, Dr. Guy, in Dr. Todd's absence, directed 20 minims of the acid to be given; and five minutes after, 10 minims more, but without any obvious effect.

At half-past 5, Dr. Todd ordered another 20 minims of prussic acid. This producing little or no good, at Dr. Guy's suggestion Dr. Todd ordered a frigorific mixture to be applied to the spine and throat. This soon had the effect of alleviating all his symptoms. He became more quiet; the retching was less frequent; he did not foam so much at the mouth. The larynx and pharynx were free from spasm; but his feet getting cold, and his pulse falling, the ice-bags were removed, and hot bottles applied to his legs. He swallowed some ice, too, with greediness, after which his power of deglutition improved so much that he was enabled to drink some wine and liquor opii sedativus.

At 7 o'clock, as he was again becoming excited, the ice was reapplied, but again removed at 8, since the heart's action was then much depressed. From this time till 11 he was remarkably free from spasm, and his deglutition good. His tendency to delirium, however, increased, and at 11 o'clock Dr. Guy tried the cold douche. Almost immediately afterwards, the pupils, which had been previously much dilated, became extremely contracted, and in a few minutes the boy was dead.

The body was examined 15 hours after death, the autopsy revealing congestion of the brain, spinal cord, and their membranes. The cerebral substance was somewhat softer than usual. The bronchial tubes and lungs were also congested. Stomach empty and contracted; pharynx injected; its follicles rather large.

As to the medical treatment of hydrophobia, nothing can be said to offer any rational hope of alleviation of the symptoms. All the most powerful remedies in the Pharmacopoeia have proved equally ineffectual—opium, mercury, strychnia, prussic acid. Indeed, it is useless to enumerate the category of medicines which have been employed, as no preference can be attached to one, where all have proved useless. Bleeding and cold affusions have proved equally ineffectual. But it is not on this account, therefore, that our exertions should be stayed: on the contrary, they should be exerted to the fullest extent; for, with the improvements that science is daily making, we may yet hope that some light may be thrown upon the subject, and that we may yet be permitted to overcome this direful disease, by the discovery of some antidote to the poison; for there is every reason to believe that rabies does not affect any particular system, but influences the whole organismus, by producing a change in the blood which unfits it for the general purpose of nutrition. Post-mortem examinations have thrown hitherto so little light upon the subject as to the cause of death in hydrophobia, that it is useless to dwell upon the various morbid appearances which have been recorded as the result of these investigations. The most general opinion, however, seems to be, that there is some change in the appearance of the nerves. In the two cases I have seen examined, nothing could really be demonstrated as a pathological change referable in any way to the disease. One person thought the brain and spinal marrow rather drier than usual; another, that there was a slight degree of softening of the corpora striata and thalami. In fact, ingenuity sought explanation where no tangible morbid change could account for death.

CLINICAL LECTURE
GIVEN AT
ST. GEORGE'S HOSPITAL,

On May 25th,

By CÆSAR HAWKINS, Esq. Surgeon
to the Hospital.

[Reported by Mr. Henry Gray.]

LECTURE IV.

*Cases of Ulceration and Stricture of the
Rectum, and Excrescences around the
Anus.*

GENTLEMEN, — Among many subjects worthy of your attention, are the ulcerations and diseases which take place at the lower end of the bowels: a good number of these cases have lately come under my care, which I have grouped together, forming a series of cases, which I intend to bring before your notice. First, then, you may meet with some cases in which there are tumors and excrescences about the anus, but no disease within the bowels; secondly, there are others in which disease exists in the bowel, but there is no external disease; whilst, thirdly, you may have some cases in which there is disease both within the bowel and external to it. The first case that I shall bring before you illustrates the first class of these diseases. Mary Anne Patten, æt. 25, servant, was admitted May 5. The notes say—There are a few warts, covered by true skin, situated near the anus on each side, not of very large size; there is no discharge from them; she has no other complaint, and they have existed five months. Was ordered a rhubarb draught, and the lead lotion was applied. On the 9th some of the warts were tied, and some others excised. On the 15th the remainder were removed, and she went out cured two days afterwards. When you have cases such as these, in which no specific origin can be traced, in which they are nothing but simple warts, the peduncles being accessible, they are easily removed by the scissors and ligature, as in this case, or by various local applications, and you see in this case that in a fortnight the disease was cured.

But in the next place you have cases in which the disease is situated all around the margin of the anus, sometimes independent of internal disease, but arising from some specific cause; and sometimes with internal disease also, as in the following case of Jane Gilmore, æt. 22, admitted March 10th in the Burton Ward. She has condylomata at the margin of the anus, which are very painful, and from which there is a good deal of discharge; they have existed for seven or eight months, and they came eleven months

after she had had primary syphilis; she has pains in her legs; there is a small ulcer on the inside of her cheek, and another on the tip of her tongue. The condylomata are very large, and partly external and partly within the sphincter. There is a good deal of constriction of the rectum just within the sphincter, as was ascertained by passing the finger. The exact origin of the disease seemed somewhat doubtful, but it is more probable from the history that they commenced externally, and proceeded back into the gut. These structures are probably a modification of diseased skin, which may arise from various causes, most frequently from the natural secretion becoming morbid, as in gonorrhœa and syphilis, in which complaints warts and condylomata are very frequent; the secretions not improbably passing from the vagina, running down between the clefts of the nates and anus, irritating the skin, and thus giving rise to those diseased structures which in the former case were simple warts, but in this were probably produced by the poison of syphilis. On the 5th of April the condylomata were removed with curved scissors; they were about one inch in breadth and length, and situated all around the anus. She was put under the influence of ether, which was successful in relieving the pain; there was some hæmorrhage, which soon ceased. She left the hospital a month afterwards, the whole of the surface having healed, but was not perfectly level with the surrounding skin. In this case care was taken not to remove more of the surrounding skin than was necessary, on account of the greater degree of contraction which would take place around the anus, some having existed prior to their removal; a kind of troublesome stricture being caused just within the sphincter by this contraction.

The next case is the exact reverse of this; it is that of Elizabeth Mount, æt. 24, admitted the 5th of May. There is slight stricture of the rectum, with occasional purulent discharge from the bowel; there is a crop of condylomata at the margin of the anus, probably produced by the discharge, and the skin around looks very inflamed; there is an abscess (apparently) situated very near the anus, in which fluctuation can be felt very plainly; one labium is very much swollen, but there is no discharge from the vagina; bad rigors three weeks before, but has not had any return since; sweats a good deal occasionally; has a good deal of pain in the hypogastrium, and cannot pass the motions without great pain; the fæces are always scybalous; the condylomata have existed for ten months. Here, then, the condylomata do not seem to depend, as in the last case, upon any external disease proceeding inwards, but upon disease

existing within the bowel, the discharge inflaming the skin around, and causing great thickening between the anus and bowel. It is very important in all these cases to examine the interior of the bowel, and it is a frequent occurrence to find disease within, first pointed out by the inflammation and ulceration and formation of excrescences that is going on externally. On some occasions the bowel has not been examined, when, if it had been so, the disease would have been discovered, and would have saved the patient endless trouble and distress. In one case a woman came under my care, whose sister had died of diseased rectum, and who was naturally alarmed by some excrescences formed in herself around the anus, and by a degree of constipation which only allowed her to pass evacuations from the bowels once a month, when the menstrual excitement produced some action of the rectum. Her surgeon had cut off some excrescences, of course without relief, because on examining the bowel, which he had not done, I found a very bad stricture, which I dilated by bougies, and which she kept open for many years by passing them for herself. In this case of Mount the abscess burst, but she went out of her own accord before she was properly cured, nothing having been done for the condylomata.

The ulceration which takes place internally independent of external disease, is shown in another case.—John Malony, *æt.* 60, admitted under Dr. Nairne, 7th of April, with rheumatic gout; was transferred to me on the 26th, for an ulcer of the leg and discharge from the rectum, which he has had for the last eight months; it came on after cholera. The disease, which was situated here in the interior of the bowel, caused ulceration, which was very considerable: the man was likewise in a bad state of health: an injection was used, made of the decoction of starch with twenty minims of the balsam of copaiba; something similar to our green-dressing of the hospital for external ulcers: a morphia draught was also given: under this treatment the discharge ceased. He has not been examined very lately; the ulceration probably, however, has not quite ceased. You may do a good deal by this internal treatment, sometimes also by a few drops, thrice daily taken by the mouth, with liquor potassæ, and by remedies which act more particularly on the lower end of the bowel, as, when the ulceration is quiet, the confection of black pepper: this was ordered for the last patient, and frequently heals up small ulcerations. You may give it in doses of $\mathfrak{ij}$. to $\mathfrak{ss}$. o. n. for three or four weeks together. Some ulcerations are more troublesome and last longer, and then these means are not always sufficient, even though the strictest

attention may be paid to the general health of the patient. In some cases small doses of the liquor arsenicalis, three to five drops three times a day, given with some other tonic, may be beneficial. Perhaps arsenic is especially useful, like the pepper, by its local effect, for it affects the rectum as well as the stomach in whatever way it is given, *e. g.* if a solution of arsenic is injected into the veins it irritates both these parts; if, however, it is given with bark or some other tonic, it is at times very beneficial in some cases of ulceration of the rectum. You must also apply local applications by means of the speculum, caustic in substance, the red wash, or by introducing a bougie covered with linen on which some mercurial ointment is smeared. If under this treatment the ulcer still remains troublesome and gives rise to great straining and irritation, you must resort to entire division of the sphincter, so as to relieve those symptoms by preventing all irritation arising from lodgement of *feces* about the ulcers, and from the action of the muscles of the part. This treatment is, however, seldom necessary; but in obstinate cases it may be resorted to. I mean in obstinate cases confined to this part of the bowel; of course it can be of no use where the disease is more extensive. Here, for instance, is a portion of the intestine of a patient [exhibiting a preparation] who was admitted under Dr. Wilson in January, 1843, where there was great diarrhoea from the extensive ulceration that was going on. He suffered for a long time, his bowels were always acting, and the great trouble he caused not only to himself but his friends and the nurses of the hospital, preyed so much on his mind, that a few days after his admission he cut his throat, causing a fatal wound of which he died in two days. The wound inflamed and suppurated, and after death there was found an extensive purulent effusion in the mediastinum behind the sternum, inflammation of both lungs, with hepatization, the result of recent inflammation. In the post-mortem examination of this case the small intestines presented nothing remarkable, but the whole of the large intestine, from the *caput coli* to the anus, was extensively ulcerated, and of a dark-purple colour in patches. In the *caput coli* the disease existed in a few separate ulcerations, surrounded by large portions of mucous membrane, but still proceeding down to the muscular fibres, which in some places even here were laid bare. In the transverse colon and remaining part of the intestine the ulcerative process had nearly destroyed the whole of the mucous membrane, leaving as it were only small islands of it. The membrane was softer and more pulpy than natural; the circular fibres of the intestine were extensively laid

bare, and its coats were in many places so thin that they gave way on being removed for examination. I need hardly say that when so extensive a disease as this takes place, the patient's recovery is hopeless, not only from the considerable discharge, but from the hæmorrhage which takes place; emaciation and hectic come on, and the patient generally sinks under it.

But we now arrive at another part of our subject: if the ulcerations are small they may heal up; if large, however, they are, as we have seen, generally fatal. Now when an ulcer heals up, the cicatrix which remains, being smaller than the original wound, contraction is the result; if, then, a circular tube similar to the rectum ulcerates, the cicatrization taking place causes contraction of the tube, and thus a stricture or narrowing of it is produced: sometimes the ulceration only partially heals, and you have a stricture, but chronic inflammation and ulceration go on, the stricture yielding from time to time during the time the ulceration is considerable, and contracting again, as it heals, till at last a greater contraction takes place, and the passage of feces is totally prevented. Here is a preparation from a patient who died of phthisis, in which a portion of small intestine which had been ulcerated became healed, and contracted for nearly an inch to the size of a quill or little more. Here is another portion from the same patient, in which the contraction is still greater, producing stricture of the sigmoid flexure of the colon, and several others existed in this patient, all arising from simple ulceration and not from malignant disease. Thus, then, may fatal contraction be the result of simple ulceration of the bowel at any part, but it is chiefly in the rectum that you meet with it; it is the most frequent by far of the cases which are called stricture of the bowel: real hardening and growth of the coats of the bowel is in fact very rare, more so even than malignant disease of the rectum; scirrhus of the rectum does not unfrequently take place, however, and possibly exists in the next case I shall bring before you, that of Geo. Jackson, æt. 36, groom, admitted May 5, with several large pendulous condylomata, some an inch long, situated near the edges of the anus, and there is a good deal of hardening and constriction of the skin between the excrescences and the anus, as well as of the rectum itself, from ulceration, extending as far as the finger can reach, giving something of the feeling of scirrhus. Bowels never act without medicine or an injection, which he is frequently in the habit of using; his motions are never larger than a tape, and he has pain in passing them; matter, occasionally mixed with blood, passes at the same time. Has lost flesh

lately. Has had constant hacking cough, with yellow expectoration, for the last two years, but it has become more violent during the last six weeks: the disease of the rectum is of three years' standing. He has had a good deal of riding, and attributes much harm to a long ride, quickly performed, to Rome. These drawings and preparations shew us the ulcerations of the intestines occurring in patients affected with phthisis, and others in which there is dysentery and piles, independent of any affection of the chest. In this case of Jackson the disease is very bad; it is almost impossible to pass the finger through the contraction, preventing almost the passage of the feces, and shewing how dangerous must be the consequence if any solid body is retained, which is swallowed and not digested, and being unable to mould itself to a proper form, may, by its stoppage, totally prevent the passage of the feces, and hence cause death. On the 7th, some opium and colocynth were administered. On the 21st, six days afterwards, the notes say—health improving; motions slimy, but containing no pus mixed with them; a bougie, covered with lint and dipped with the solution of the nitrate of silver, to be passed every other day. In some cases much good can be done by passing bougies; it requires, however, great care, and you must proceed cautiously every other day or every third day, in some cases just passing it only and then removing it; in others it may remain for half an hour, or one or two hours. If you proceed carefully in this way the parts become in time relaxed, and the patient's life may be considerably prolonged by it. A woman, Jane Anderson, æt. 27, married, was admitted April 7th, Princess's Ward, with stricture of the rectum and discharge of a purulent character; the end of the finger cannot be passed through the stricture, which arises from contraction following ulceration. She was confined seven years ago and had piles afterwards, which were tied; she has had stricture and discharge from the rectum ever since: the disease was nearly cured till five weeks ago, when she caught cold, and since then the symptoms have returned: there are no piles at present. In this case, no doubt, the piles were the result of pregnancy—a frequent occurrence. The bougie in this case was used, and was productive of much benefit. On the 22d the notes say—the bougie was again passed, to be left in for an hour; improving. On the 24th was much better, and she went out much relieved on the 28th. You have also seen another case somewhat similar to this and relieved in the same manner, which occurred in a patient of much greater age. She was 58, and was admitted the 12th of last month. There was stricture of the rectum about two inches from the anus;

cannot pass her motions without great pain, nor unless she takes medicine; they are not larger than a quill; she has frequently a purulent discharge from the bowel. She has had stricture for twelve months, and was in the hospital about six months ago under Mr. Keate, when bougies were passed, which gave great relief; she has had many children, but not for many years; cannot assign any reason for the disease. There is a fistulous opening on the posterior part of the crest of the ilium which leads to the *dorsum illi*: on the finger being introduced into the anus there was found to be a stricture scarcely admitting the point of the finger, with much ulceration and contraction of the bowel: bougie to be used. On the 19th a large rectum bougie was passed and retained for two hours. On the 21st she went out of her own accord.

The great difficulty in these cases is to make patients attend to themselves after their discharge from the hospital, the stricture in all cases being so likely, if neglected, to return; they should use a bougie themselves, which will prevent any obstruction, and they may preserve their lives for years. In the next place the ulceration may not be confined to the mucous membrane of the bowel only but may communicate with the parts around. In the urethra, as you know, it is common for an abscess to take place external to the canal, the ulceration passing through all the structures of the urethra; so also with ulcerations within the bowel, it may go through all the coats, and give rise to inflammation and abscess in the surrounding cellular membrane; or sometimes there is a long narrow fistula communicating with the bowel by only a very small opening; or sometimes fistulae form in various directions, communicating with the bowel or with each other in a tortuous manner, and opening even at some distance from the anus, as you may see in this preparation. In any case in which you may be consulted for fistula, make an examination of the bowel, and if you find considerable ulceration, and the fistula is connected with it, whether there is stricture or only such extensive ulceration without contraction, it is better not to operate, as the incisions will seldom heal, and the operation is not without danger. If the fistulae are quietly discharging, they give little trouble, and it is better to leave them to themselves; try to relieve the stricture or the ulceration first, and then, if the patient's health becomes restored, you may operate, and sometimes with success. If there are fistulae connected with extensive disease you may however be obliged in some cases to do something to prevent confinement of pus. In cases of such extensive sinuses connected with the cel-

lular tissues as these drawings shew you, and collections of pus are forming, you are obliged to open them, or else the abscesses may extend further into the pelvis. The pus of these abscesses is not of a healthy character, and unless evacuated foul ulceration takes place; this spreads, goes up the sides of the bowel, and peritonitis is a frequent consequence from extension of the ulceration, sometimes even within the peritoneal cavity; secondary abscesses also often frequently take place: but the same reasons operate to prevent your meddling with them unnecessarily, for you may frequently see patients die in three or four days after from cellular inflammation and peritonitis, or ten or twenty days after the operations from absorption of pus and secondary abscesses.

Here is another case, in which the disease has been of fifteen years' standing, the patient having been recently admitted, but having also been under my care a year ago. "Katherine Kelcher, admitted March 22d, with stricture of the rectum, of fifteen years' standing. There is one stricture an inch and a half from the anus, and another about an inch higher up, according to her statement, both following ulceration." I do not think, however, that there is more than one circular contraction. "Bowels have not acted for eleven days; great discharge of matter from the anus, as much as half a pint in the course of the day, causing great pain. Was in the hospital four years ago under Mr. Keate, and then obtained a good deal of relief by a bougie being frequently passed. She again came under me in the summer of 1846, and went out in a bad state of health, the stricture having been divided previously. She became much better in her general health after leaving the hospital, and continued so until two months ago, when she could pass nothing by stool, except after taking great quantities of drastic purgatives, and then suffered great pain in passing her evacuations, which were never larger than a quill. She has had rigors and sweats for the same period. She attributes the disease to neglect during labour fifteen years ago; but she had, previous to that period, suffered from habitual constipation, which she had neglected."

The disease in this case may arise, then, from habitual constipation, or the labour she attributes it to, and to which many women attribute the first occurrence of the disease; and pregnancy is not unlikely to be the origin, from the obstruction to the passage of the fœces, caused by the distended uterus. The rigors and sweats were signs of pus forming, and from the large quantity which she passes, there must be a large suppurating surface. But we find, in addition, on the 3d of May, five weeks after her

admission, she said she felt something give way, she having had previously sweats and great pain in the back, and about a quarter of a pint of pus was suddenly passed by the bowel,—an abscess, in fact, connected with the bowel, having burst, which is liable at any time to be blocked up, and, consequently, to produce most dangerous symptoms. It is not improbable that it was situated at the left side of the pelvis, connected with the disease which existed two years ago, and with what was then done for her. In some cases, where the stricture is very much contracted, it may be divided with advantage by the introduction of a probe-pointed bistoury, the bougie being by this means allowed to pass more easily. I did this in Kelcher when she was last in the hospital; but the incision was followed by inflammation and suppuration in the cellular tissue, and an abscess formed, which shewed itself on the left side of the abdomen, in the iliac fossa. She was of course very ill, but I was absent at the time, so that I did not myself see it, but I understand she was relieved by its bursting into the rectum. I subsequently employed bougies, and she left the hospital, as we have seen, much relieved till two months ago, when the same or another abscess formed.

The abscess formed in this case was liable to very dangerous consequences if it had not discharged itself by opening into the rectum; but there is always great risk from the ulceration and destruction of parts in the sinuses which form about the rectum, which ultimately give rise to fatal inflammation of the peritoneum. A case came under my care last year which shewed one danger attending such sinuses—namely, actual perforation of the peritoneum. A patient, 34 years of age, admitted the 11th of March, 1846, with pendulous tumors and ulcer of the rectum, having, in addition, piles, which bleed; has great difficulty in passing her motions, and bearing-down pains in the region of the uterus. There is a stricture of the rectum about two inches from the orifice, with much thickening of the parts around, the effect of which can be felt from the vagina; the mucous membrane of the anus is in an ulcerated state.

20th.—Has complained of continual bearing-down pains, followed by shiverings.

23d.—Increased pain.

26th.—Much pain in the bowels, with rigors.

30th.—Pains not so continual, but at times very severe; bowels confined for the last five days; discharge profuse.

April 3d.—Had an injection administered, since which the pain in the abdomen has increased.

4th.—The abdomen is more painful; ab-

domen tense; continued sickness. 11 P.M. died.

Post-mortem appearances.—Abdomen tympanitic. When cut into, a large quantity of air escaped from the cavity of the peritoneum, but no marks of decomposition existed about the body. The cavity of the peritoneum contained a large quantity of puriform fluid, and the convolutions of the small intestines, especially those that were found in the pelvic region, were united in various places to each other by recently effused lymph. The sigmoid flexure of the colon was very much dilated, and filled with large masses of hardened feces. The mucous membrane of this part of the gut was for the greater part destroyed, the muscular tissue being laid bare: these appearances existed also in the whole of the rectum; but here in many places the muscular fibres were dissected off, and large sinuses ran in between them and the cellular tissue of the pelvis, which was thickened and condensed. At the lower part of the rectum, but out of the reach of the finger, there was a strongly-marked contraction, scarcely admitting of the passage of the index finger, where the coats of the gut were very much thickened. The cellular tissue around the gut was thickened and condensed, and the uterus and rectum were firmly united to each other with a long sinus communicating between them with the gut. A probe, passed from the gut into the sinus, penetrated into the cavity of the peritoneum by a small ulcerated opening with dark margins: the cellular tissue around the anus was enormously thickened, as well as the skin in the neighbourhood. Most parts of these tumors owed their origin to piles; but some of them appeared to be a simple thickening and condensation of the skin and cellular tissue: the thickening appeared to depend upon chronic inflammation, and not scirrhus disease.

It was seen that the probe passed into the peritoneal cavity, the peritoneum having probably ulcerated, and at last gave way, just as it does sometimes in ulceration of the small intestines when no lymph is thrown out, and adhesion does not take place. Perhaps, however, when the injection was used, some little force was employed, which ruptured the ulcerated portion, and thus inflammation of that cavity was set up by a small portion probably of the contents of the gut passing into it. This shews the great danger that exists in all cases where the disease is of much extent of fatal peritonitis by contiguity, or by perforating ulcer, or by violence.

I have thus brought before you twelve cases—forming a series, and in fact—illustrating some of the diseases to which this part of the body is very liable.

LECTURES ON NUTRITION, HYPERTROPHY, AND ATROPHY,

Delivered in the Theatre of the Royal College of Surgeons, May 1847,

By JAMES PAGET, ESQ.
Professor of Anatomy and Surgery to the College.

[Reported by WILLIAM S. KIRKES, M.D.]

LECTURE V.

Atrophy—definition of the term—implies deficiency, not cessation, of the formative process—two kinds of atrophy: one characterised by simple decrease, the other by degeneration, of tissue—these two usually concur, though either may exist alone—the most common form of degeneration of tissue is into fat—exceptions to this.—Fatty degeneration of a part probably always the result of atrophy—evidence for this view afforded by the frequent occurrence of such degeneration in an emaciated part—by its often ensuing after circumstances which in other instances give rise to mere reduction of size—and more strikingly by the phenomena of senile atrophy—formative process defective in old age—senile atrophy, as exhibited in the two classes of old persons, the fat and the lean.—Gradual disappearance of the nucleus coincident with the fatty degeneration of a fibre or cell—this phenomenon not observed in simple atrophy—importance of the nuclei in the formative process—shown by their invariable presence in developing cells—and by their frequent persistence and occasional higher development after the cell or fibre is perfected.—Fat an organic substance of the lowest order—John Hunter's views of it.—General conclusions respecting atrophy with fatty degeneration.

Conditions leading to the occurrence of atrophy—some are the opposite of those inducing hypertrophy—examples illustrating the effects of these conditions—and of others which interfere with the process of healthy nutrition.—In some cases atrophy of a part seems to occur spontaneously—and then usually manifests itself as fatty degeneration—most common seat of this form of atrophy—adaptation in size of the blood-vessels and nerves to the degree of atrophy of a part—the oily matter in fatty degeneration probably not a new deposit in, but a transformation of, the tissue.—No necessary connection between the fatty degeneration of an organ and general obesity—fat formed within, not that accumulated round, a tissue, constitutes disease.

I PROPOSE now to consider the subject of

Atrophy,—the very contrary of the hypertrophy which I endeavoured to elucidate in the last two lectures.

By Atrophy is commonly implied, not the cessation or total privation of the formative process in a part, but its deficiency; and, as I limited hypertrophy to the cases in which an increased power is acquired for a part by the growth, or by the development, of healthy tissue; so shall atrophy be here taken to mean only that process by which a part either simply wastes and is reduced in size, with little or no change of texture, or else, gradually and regularly degenerates into a tissue naturally existing in some other part of the body—as the fibro-cellular, or the adipose.

By the terms of this limitation it is implied, that, as there are two kinds of hypertrophy—the one with growth, the other with development,—so there are two kinds of atrophy—the one with simple decrease, the other with degeneration, of tissue. In both these forms, alike, there is a loss of functional power in the part; but in one, this loss is due to the deficient quantity, in the other to deteriorated quality, of the tissue. But, as in hypertrophy the development and the growth of the affected part usually concur, so, in atrophy, a part which becomes smaller, usually also degenerates, and one which degenerates, usually becomes smaller. Still, one or other of these—either the decrease or the degeneration—commonly predominates; and we shall see reasons why the distinction is very necessary to be made.

When tissues degenerate in atrophy, the product is most commonly fatty matter, in the form, sometimes, of organised adipose cells, but oftener of oil-drops lying loose in the interstices of the tissue, or in its cells or tubules.

A few tissues, indeed, as the cartilaginous, appear to degenerate into fibro-cellular tissue: such is the process in the fibrous degeneration to which the cartilages are liable, and in which we trace (so far as my observations yet extend) the gradual splitting of the intercellular substance of the cartilage, and the disappearance of its cells. Then, as it splits in finer and finer portions, the finest are gradually transformed into bundles of true cellular tissue, which, however, are of no long continuance, and are rubbed away in the friction of the joints.

Certain morbid structures—as adhesions, the fibrinous deposits in the arteries, fibrous tumors, and the walls of cysts,—degenerate with deposits of earthy matter, or calcification. But I am not sure that this occurs in natural structures; and the fatty degeneration is so much more general, that the observations which I shall now offer will relate almost exclusively to it, and to the atrophy by simple decrease or emaciation.

In the first place, it may be necessary that I should shew the reasons for believing that fatty degeneration of a part is always to be regarded as of the nature of an atrophy—as a diminution, rather than as a perversion, of the nutritive process. And I will endeavour to do this in some detail, because, ever since Mr. Bowman* discovered the fact that, in fatty degeneration of the liver, the fatty matter is collected within the true secreting cells of that organ, the disease has been constantly acquiring, by the observations of Dr. Johnson† and others, more interest and importance, and seems, at length, capable of being described in accordance with general laws.

The reasons, then, for believing that the fatty degeneration of a part is of the nature of an atrophy, are principally these:—

First, its frequent coincidence with diminution of size, *i. e.* emaciation, in a part. In the limbs, the most common form of atrophy from disease is manifested in diminution of size, together with increase in the fatty matter combined with the muscles and bones. Such is the condition displayed by the bones of these lower extremities‡, and such was the state of the paralysed muscles that were attached to them; such, also, is the condition of the majority of atrophied stumps after amputation, and of many other cases.

Secondly, the fatty degeneration of a part is commonly seen as the consequence of the very causes which in other instances give rise to simple wasting or emaciation of the same part. Thus, when the function of a part is abrogated, from whatever cause, the part may in one person shrink, in another degenerate into fat. The emaciation of a paralysed limb is a familiar object: but here are some of the muscles of such an one, hardly reduced in size, and all transformed into fat§. Here is a pancreas, with a cancerous tumor pressing on its duct, and all behind the part obliterated is degenerated into fat; and here another pancreas, the duct of which was obliterated, and is now in part dilated into a large sac; but in this, the part behind the obstruction is simply shrivelled, dry, hard, and scarcely lobulated.¶ Here, also, are bones atrophied in bed-ridden persons; some are exceedingly light, small, and dry: others are not small, but very

greasy, full of fatty matter. Either of these results, also, or the two mingled in various proportions, may result from defective supply of blood; as in the cases of atrophy of parts of bones after fractures, as described by Mr. Curling,* to which I shall have again to refer. So that from these, and from other cases hereafter to be mentioned, we may say generally, that nearly all the ordinary causes of atrophy may produce, in any part, in one case reduction of size, in another, fatty degeneration.

But, thirdly, by far the most striking evidence of this is to be found in the phenomena of old age. In all real old age—and infirmities speak more plainly of the old age I refer to than do the years a man may have counted,—the formative power is defective: the power which was dominant over the waste of the body in childhood and youth, and maintained the balance in mature vigorous manhood, now fails—as the tide, after a flood and a period of rest, turns and ebbs down. Thus, atrophy is a uniform concomitant of the infirmities of old age; but the results of senile atrophy are not the same in all: rather, you find among old people—you might almost thus divide them into two classes—the lean and the fat; and these, as you may see them in any asylum for the aged, personify the two kinds of atrophy I have spoken of.

Some people, as they grow old, seem only to wither and dry up—sharp-featured, shrivelled, spinous old folks, fet withal wiry and tough, clinging to life, and letting death have them, as it were, by small instalments slowly paid. Such are the “lean and slippered pantaloon,” and their “shrunk shanks” declare the pervading atrophy.

Others—women more often than men—as old and as ill-nourished as these, yet make a far different appearance. With these the first sign of old age is that they grow fat; and this abides with them till, it may be, in a last illness sharper than old age, they are robbed even of their fat. These, too, when old age sets in, become puffy, short-winded, pot-bellied, pale and flabby; their skin hangs, not in wrinkles, but in rolls; and their voice, instead of rising “towards childish treble,” becomes gruff and husky.

Now, these classes of old people, I repeat, may represent the two forms of atrophy—of that atrophy by decrease, and that by degeneration, of tissue—to which we shall find nearly every part of the body liable. In those of the first class you find all the tissues healthy, hardly altered from the time of vigour. I examined the muscles of such an one lately—a woman, 76 years old, very lean, emaciated, and shrivelled. The fibres

* Lancet, Jan. 22, 1842, p. 560.

† Medico-Chirurgical Transactions, vol. xxix. 1846.

‡ Exhibited from the Museum of St. Bartholomew's Hospital, Series 1, sub-series A, No. 151.

§ Two specimens were exhibited: one from the Pathological Museum of the College of Surgeons, No. 9: the other from the Museum of St. Bartholomew's Hospital, Series v. No. 1.

¶ The first of the above specimens was exhibited from the Pathological Museum of the College of Surgeons; the other from the Museum of St. Bartholomew's Hospital, Series xx. No. 2.

* Medico-Chirurg. Trans. vol. xx.

were rather soft, yet nearly as ruddy and as strongly marked as those of a vigorous man; her skin, too, was tough and dry; her bones, slender indeed, yet hard and clean like this skull*: her defect was a simple defect of quantity.

But in those that grow fat as they grow old, you find, in all the tissues alike, bulk with imperfect texture; fat laid between, and even within, the muscular fibres, fat about the heart, the kidneys, and all the vessels; and the bones so greasy that no art can clean them: the defect of all these is the defect of quality.

Now, I do not pretend to account for this great difference in the concomitants of the other infirmities of old age in different people. The explanation probably lies far among the mysteries of the chemical physiology of nutrition, of the formation of fat, and of respiratory excretion; and we may hope to find it when we know why, out of the same diet, and under all the same external conditions, one class of men, even in health and vigour, store up abundant fat, and another class excrete the elements of fat. For it is particularly to be observed, that these diversities of senile atrophy are in but a slight measure determined by external circumstances: we see them in poor-houses, and in all asylums for the aged, although the diet and every other condition of life are alike for all.

Now, the conclusion which we may draw from these facts concerning the atrophous nature of fatty degeneration, is remarkably corroborated by the anatomical condition of parts which have suffered the degeneration; namely, that when the accumulation of fat exceeds a very small amount, the nucleus of the cell, or other elementary structure containing it, is pale and indistinct, and, when the fat is abundantly collected, disappears completely. I have noticed this so often in fatty degenerations of the liver, kidney, and muscles, that I can speak of it almost certainly as a general fact.

The diagrams [exhibited], which were all made from nature by Mr. Aldous, are chiefly destined to illustrate the fatty degeneration of the heart, of which I shall speak further in the next lecture. But, in illustration of the fact just mentioned, I may refer to these representing muscular fibres of the heart after immersion in acetic acid. The effect of the acid is, as you know, by making the other constituents of the fibres more transparent, to bring into clearer view the nucleus, on which the acid exercises apparently no other influence than that of making its

borders darker, as if by corrugating them. The result of thus immersing them in acid is, that the healthy fibres of the heart always display a succession of nuclei at nearly equal distances from each other, and usually lying in the middle of the presenting surface of the fibre. Such nuclei are, so far as I know, peculiar to the heart-fibres; they are large, reddish-yellow like blood-globules, especially when the heart is strongly developed; their form is elongated, oval, or nearly parallelogram, and at each of their ends one almost always sees tapering groups of isolated, small, yellowish granules, like particles separated and departing from the nucleus. But, in the degenerated fibres—when the change is least marked, and but little fatty matter has collected within the sarcolemma—the outlines of the nuclei look dim, and they lose their colour. In a further advanced stage the nucleus of the fibre cannot be seen at all; its former place is indicated, if at all, only by some out of the narrow column of yellow granules; and in a yet later stage, or when the sarcolemma appears nearly full of fatty particles, all trace of both the nucleus and these granules is lost.

The same may be said of the fatty degeneration of the renal and the hepatic cells. Neither in these, nor in the muscular fibres, is the nucleus concealed by the collection of the globules of oil; turn the cell as you may, and watch it as it rolls, yet you will find no mark of nucleus; it is either gone, or is itself transformed into one of the oil-globules. Like the nucleus of the muscular fibre, it disappears gradually. When but a few small oil-drops are in the cell, the outlines of the nucleus grow dim; as they increase it vanishes, or, as I am inclined to think, a part of its constituents are transformed into oily matter, and it constitutes one of the drops of oil, perhaps the largest, within the cell.

Now this is, I think, a very significant fact in regard both to this fatty degeneration, and to the general physiology of the nucleated cell. It appears the more so from these facts: that in the atrophy with mere decrease, this disappearance of the nuclei does not occur—a fact which I have been able to observe in cirrhosis, and in simple emaciation of the heart; and that, notwithstanding the great change in the nucleus and the contents of the cell or the tube, the wall of the cell itself, and of the tube—that is, in the cases just adverted to, the cell-membrane and the sarcolemma—remain apparently unchanged. So do the neurilemma and the membrana propria, in cases of fatty degeneration of the nerve-fibres, and of the tubules of the testicle.

The peculiar interest of the fact is in the corroboration it gives to the other evidence

* The skull of an old edentulous person, in which the results of this form of senile atrophy by simple decrease are well illustrated. Prep. 8 in the Pathological Museum of the College of Surgeons.

which has been gradually accumulating towards proving that these bodies—which we call nuclei when they lie in cells or tubes, and cytoblasts, or cell-germs, when they lie loose, or without envelopes—that these, more than the cells, are the organs through which issue the strength and the direction of the formative process. At the lowest estimate, they seem to show that the existence of the nucleus is always essential to what is commonly called the formative power of the cell, or the organ developed from it; and that the office of the nucleus does not, as Schwann implies, cease when the formation of the cell is perfected. But beyond this, facts now seem to prove that we ought to ascribe to the nucleus a much greater power and influence in formation, than to the cell.

It would be out of place to enter now into a long discussion of the physiology of the nucleated cell; yet I may briefly mention the reasons for ascribing an essential and principal formative power to the nucleus.

And first, there is, I think, no example of development, in either structure or composition, effected in the animal organism by cells which have no nuclei; while there are many instances in which nuclei, whether contained in cells or without them, appear to assume higher forms, or to be centres and sources of formative and reproductive power.

It may suffice to refer especially to the researches of Professors Henle* and Goodsir†. Those of Henle bearing on this point relate especially to the formation of what he has named "nucleus-fibres," including those which, with the general characters of elastic tissue, are variously interwoven with the fasciculi of cellular tissue, the fibres of involuntary muscle, the membranous coats of blood-vessels, and other parts; in all of which he may be said to have proved that these nucleus-fibres are formed, as their name implies, from nuclei‡.

The investigations of Mr. Simon§ also, on the glands without ducts, have shewn a wide extent of gland-function discharged, however obscurely, by cytoblasts alone or principally; and have confirmed all the evidence that they, isolated, or as nuclei to cells, are the chief agents in the elaboration of secretions. And the observations of Professor Goodsir||, in his several papers on Centres of Nutrition, on Secreting Struc-

tures, and on the Structure of the Serous Membranes, prove the power of the nucleus both in the production and multiplication of cells, and in the formation and storing of secretions; and afford, I think, a fair ground for his ingenious hypothesis that it is their office, "as centres of nutrition," to "draw from the capillary vessels, or from other sources, the materials of nutrition, and to distribute them by development to each organ or texture after its kind*."

To these, which are in many respects confirmatory of the best observations of Dr. Martin Barry,† and which are themselves confirmed by Kœlliker‡ and many others, I may venture to add my own observations on the development and growth of tumors.§ They shew that the tumors which grow most rapidly are formed, not of cells, but of cytoblasts, or nuclei (as we should call them if they were enclosed in cells); that when cells are found they are not transitional but terminal forms, not giving origin by further development to any other structures; and that when the most perfect fibro-cellular and fibrous tissues exist, they appear very certainly to be formed under the influence of cytoblasts alone—cells having no existence in the structure.

Lastly, I may refer to what was said in a former lecture|| concerning the abundance of cytoblasts in all growing tissues, and to their persistence especially, in tissues, such as the muscular, in which, because of constant action, constant and peculiarly quick nutrition must go on.

Now, while these among other facts make it nearly certain that the nucleus, whether of the fibre or the cell, is the chief seat or source of formative, reproductive, and secretive power, it is surely interesting to find that in those changes in which, by all their conditions, defective nutrition is most evidently indicated, the nucleus is absent or imperfect. I am not, indeed, yet prepared to prove, as beyond a doubt, that it is the failure of the nucleus which brings about the degeneration of the cell or fibre. At present I can only see the concurrence of the two changes, and the frequent existence of instances in which the nucleus appears pale and fading, before any fat is deposited in the cell; but it will be very strange if we do not before long find enough to prove that the defect of the nucleus is the first defect, and the essential condition of the disease.

* Allgemeine Anatomie. 1841, p. 192-9.

† Anatomical and Pathological Observations, by John and Harry Goodsir, 1845, Art. "Centres of Nutrition."

‡ For the mode of formation and arrangement of the nucleus-fibres in the different tissues, as described by Henle, see Henle, loc. cit. p. 194; or Report on the Use of the Microscope in Human Anatomy and Physiology, by James Paget: Churchill, 1843, p. 8.

§ A Physiological Essay on the Thymus Gland. London, 1845, 4to.

|| Loc. cit.

* Loc. cit. page 1.

† Philosophical Transactions, 1841, &c.

‡ Schleiden und Nägeli's Zeitschrift, Heft. II. 1845.

§ Report on the Progress of Human Anatomy and Physiology in 1844-5, page 35; published in No. xliii. of the British and Foreign Medical Review.

|| Lecture III. MEDICAL GAZETTE, vol. XI. page 55.

It will now be the more interesting to enter on the consideration of some other characters of this fatty degeneration, if, while we do so, we keep in mind their connection (whether in coincidence or by consequence) with the loss of that power which results from the mutual action of the nucleus and the cell-wall, or which is derived from the nucleus alone.

In this degeneration, then, we see that the parts do not die—they degenerate; they are, as it were, paralysed in their formative power; they form, or admit into themselves, an excretion of the lowest order, structureless, ternary, crystallizable. For such, indeed, is fatty matter. As Hunter says, in the brief dogmatic style which he commonly adopted for his catalogues: "Fat is no part of an animal: for, first, it is not an animal substance; secondly, an animal is the same without it as with it,—it is to be considered as an adventitious matter; and, thirdly, it is found both in vegetables and minerals, and therefore it is a substance common to every class of matter."^{*}

The sentence might serve as a text for a whole discourse. "Fat is not an animal substance;" i.e. not one peculiar to animals; "it is found both in vegetables and animals;" it is but one of the great class of principles in which hydrogen and carbon are the chief elements, which include both animal and vegetable oils and fatty matters; and to which are nearly related, ether, alcohol, the carburets of hydrogen, and other substances which stand at the very borders between organic and inorganic matter.

And, again, "an animal is the same without it as with it;" the hybernant is the same through all his life, whether he be storing up fat for his winter's sleep, or laden with it when his sleep begins, or emaciated by its removal to maintain his warmth while his sleep and fasting lasted. It is to him almost as extra clothing is to us—a thing to put on and off—no part of his constant self. "It is to be considered as an adventitious matter;" one which, so far as the animal's self is concerned, might as well be clean cast out as an excretion, and which is so cast out whenever the supply of the hydro-carbon constituents of the food is not sufficient for respiration and the maintenance of heat.

Such is the substance which these tissues, when the nucleus is away or imperfect, admit or form within themselves; a substance which, as compared with the proper contents of muscle- and nerve-fibre, is structureless and powerless; and which, in regard to its chemical composition, is in-

ferior even to most of the normal constituents of the excretory bile and urine; for these—taurine, urea, uric acid—are quaternary, or yet more compound; and, therefore, in comparison with them, fat more nearly resembles the inorganic compounds, and bears more of the general character of an excretion.

To sum up, then, what concerns this fatty degeneration considered as a form of atrophy—

1. It is very often coincident with the atrophy which manifests itself in decrease of a part.

2. It may ensue as a consequence of any of the ordinary causes or products of atrophy.

3. It is a common form of change in the imperfection of the formative process attendant on the infirmities of old age.

4. It is attended, or preceded, by the imperfection or loss of the elementary organism which we have every necessary ground for regarding as the chief source of formative power in the tissues.

5. It is, itself, a deposit or formation, and a storing up away from all influence on the system, of a substance which has the characters of an excretion of the lowest order.

On these grounds we may regard fatty degeneration as always an expression of atrophy—of defective, not perverted, formative power. And we may hold this, even though the formation of fat be attended with increase of the bulk or weight of the part; for as the mere growth of a part, though it be great, is not so sure an expression of a strong formative power, as even a little development is, so no increase of size can counterbalance the evidence which a part gives of its degenerateness when its tissue changes to one of lower function.

Following, now, the same course as in speaking of hypertrophy, I will endeavour to explain the conditions in which atrophy may ensue. They are many more than those in which hypertrophy may originate.

Some of the causes (if they may be so called) of atrophy are the very opposites of those of hypertrophy. Thus, as we have seen that when a part is, within certain limits, over-exercised, it is over-nourished; so, if a part be used less than is proper, it suffers atrophy. For instance, I have here the heart of a man 50 years old,* who died with cancer of the stomach in extreme emaciation. You see its small bulk; it weighed only five ounces four drachms; whereas, according to the estimates of Dr. Clendinning†, in a healthy man of the same

* From the Museum of St. Bartholomew's Hospital, Series xii. No. 57.

† London MEDICAL GAZETTE, vol. xxii. page 450.

* Gallery Catalogue of the Museum of the College of Surgeons, vol. iii. p. 185.

age it would have been upwards of nine ounces. But, small as it is, this heart was adapted to the work it had to do; and in this adaptation we have the purpose of its atrophy. For, because of his cancer the man had less blood, and needed less force of the heart to propel it: so that, in direct opposition to the course of events in hypertrophy, here, as the quantity of blood diminished, and the waste of the heart by exercise in propelling it diminished, so the repair of the waste diminished somewhat more than the waste itself did; and the heart, though less wasted, became smaller, till it was only large enough for the propulsion of the scanty supply of blood.

The same may be said of the heart of which this drawing represents the natural size: it was in a woman 22 years old, who died with diabetes. It weighed only five ounces; yet, doubtless, it was enough for her impoverished supply of blood.

Again, I showed instances in which the increased flow of healthy blood through a part produced hypertrophy, and I spoke, in a former lecture, of some examples of complete failure of nutrition in consequence of an obstructed supply of blood. Now, as examples to prove merely defective nutrition in consequence of a diminished supply of blood, I adduce some specimens of change first described by Mr. Curling.* They are sections of a fractured femur and other bones showing atrophy of that portion which, by the fracture, was cut off from the supply of blood through the great nutritive or medullary artery. The consequence of the withdrawal of so much of the blood from the upper or lower fragment, according to the position of the fracture, is not death: for the anastomosis between the vessels of the wall and those of the medullary tissue of the bone is enough to support life, though not enough to support vigorous nutrition; and the frequent consequence of the fracture is, therefore, the atrophy of the part thus deprived of part of its ready supply of blood.

Moreover, as an excess of the constituents of which a tissue may form itself may produce hypertrophy of that tissue, so may defect of those constituents produce atrophy; though of this I can give but one example, in the fat, the quantity of which diminishes even below what is natural to the several parts, as often as the fat-making constituents are deficient in the food, and therefore in the blood.

In these instances we see that conditions contrary to those giving rise to hypertrophy produce atrophy.

But there are many other conditions from which atrophy in a part may ensue,—defects

of the constitution of the blood, defective or disturbed nervous influence, and many things beside. In short, whatever interferes with or interrupts any of those conditions which I enumerated as essential to healthy nutrition, may give rise to atrophy. I referred, in a former lecture,* to one of these, and now refer to it again, as having application to some of the cases I shall hereafter speak of,—namely, the effect of inflammation in a part. When a part has been inflamed, it often, as the inflammation recedes, shrivels and becomes atrophied. Much of the diminution depends, no doubt, on the contraction which ensues, in the organised product of inflammation (as it does also in cicatrices); and this contraction, by its pressure on the proper constituents of the organ, may produce wasting atrophy of them, though they themselves did not concur in the morbid process of the inflammation. But, in some of these cases—I may adduce those of chronic inflammation of the muscles, the liver, and the kidney—we may find little or no shrinking of the organ, but fatty degeneration. This concurrence of the two changes—the organization of the inflammatory product, and the degeneration of the proper texture of the part—will be found in many cases. It is shown in the heart, which I exhibited before; I have seen it also in cirrhosis, and in the enlarged brawny state of the liver: and I have little doubt of its occurrence in some of the cases of fatty degeneration of the kidney. Its explanation, I presume, is, that the process of organizing the morbid product interrupted or excluded that of repairing and replacing the proper fibres and cells of the part; hence, as in the ordinary course of events, they degenerated, and so remained.

But, besides all the imaginable instances in which atrophy of a part may thus arise as a secondary process, there are others in which we are so unable to trace, in the remotest degree, the conditions out of which the atrophy of a part results, that we are tempted to speak of it as primary, or spontaneous,—in the same sense as we might so call the natural wasting of the Wolffian bodies, the thymus, and other temporary glands. It is as if an atrophy of old age, instead of affecting all parts simultaneously, took place prematurely in one; as if there were a suspension, or annulling of the affinities, if we may so call them, on which the nutrition of a part immediately depends.

Whatever the true explanation may be, most of the parts of the body appear to be subject to this seemingly spontaneous atrophy; and it generally manifests itself in the form of fatty degeneration. Its most frequent seats are the heart and arteries, the

* *Medico-Chirurg. Trans.* vol. xx.

* *Lecture I. MED. GAZ.* vol. xxxix. p. 235.

bones, the liver, and the kidneys; but it occurs also in the pancreas and the salivary glands, and in the testicle. It may, moreover, occur in morbid products, as in the fibrinous deposits on the interior of arteries, and, as I believe, in tumors. For Rokitsky* alludes to a change which he names Saponification of cancer, as one of the means by which spontaneous cure of the disease may be effected: and in a case, which I lately examined with Dr. Ormerod, some masses of what we entertain no doubt were, or rather had been, firm medullary cancers of the liver, consisted almost entirely of oil-globules, such as are found in fatty degeneration of the natural parts. In a case of cancer of the spleen, also, occurring in connection with hard cancer of the breast, I found many of the large nucleated cancer-cells containing little oil-globules, just like those found in the cells in commencing fatty degeneration of the liver and kidney. And I have since found the same in several other cases of both innocent and malignant tumors.

Such are the conditions out of which atrophy may arise, and such the probability that some cases may deserve to be called spontaneous. From what has been already said, it appears that the condition, of which atrophy is the direct consequence, does not usually determine the mode or form of the atrophy. Constant pressure almost always produces wasting; and the atrophy which seems to arise spontaneously, usually takes the form of fatty degeneration: but defective exercise, decrease of blood, old age, and the rest, may be followed by either decrease or degeneration.

We may, again, contrast the states of hypertrophy and atrophy in regard to the mode in which the vessels and nerves adapt themselves. As a part becomes atrophied, so its blood-vessels diminish,—as the contrast of the kidneys in this specimen shows†. And, when a muscle, or any other organ, suffers atrophy, its nerves are consequently and proportionally changed. So, in atrophy of the eye, the optic nerve diminishes; and so, in a case of fatty degeneration of the adductor muscles of the thigh, in consequence of disease of the hip-joint, I found corresponding atrophy of their nerves, which atrophy of the nerves must have been, in this case, secondary: the course of events must have been inaction of the muscles in

consequence of the disease of the joint, then atrophy of them in consequence of their inaction; and, finally, atrophy of the nerves, following that of the muscles.

As to the very nature of the wasting atrophy, and the exact mode in which the quantity of a tissue is decreased, we really know, for certain, extremely little. For explanation of the mode in which the fatty degeneration takes place, I before suggested that fatty matter is probably one of the products of the spontaneous transformation of the tissues at the end of their period of vigorous existence; and that this form of atrophy only represents the state of a tissue remaining unrepaired after it has fallen into the ordinary course of degeneration. The possibility of fatty matter being formed in the transformation even of protein compounds is certain from the observation of Wurts,* that butyric acid is one of the compounds formed by the decomposition of fibrine in the open air.

And that the fat which we find in the muscles and gland-cells is really not a deposit put into them from without, but one of the products of the change of their own contents, is made probable by the frequency with which, in muscular fibres, we find the fat-particles arranged in the same manner as the proper constituents of the fibrils,—sometimes in transverse, sometimes in longitudinal rows. Indeed, one is constantly tempted, in the examination of these specimens, to think that we can trace all the transitions from the "sarcous elements"† of the muscular fibre, and the "granules" of the gland-cell, to the little oily particles, which, by clustering, and then fusing with others, at length make the great oil-globules which fill the cell.

What we can see in the degenerating normal tissues is fully confirmed by the corresponding changes taking place in abnormal products; of which Rokitsky adduces eleven classes of instances, in which protein compounds are replaced by fatty matter in such conditions that it is hardly possible to assume anything but that the fat is one of the products of spontaneous transformation of the higher compound. In some of these, indeed, the fat is found in parts to which exudations from blood-vessels could scarcely gain access; as, for example, in the substances enclosed in old shrivelled sacs with non-vascular walls; and in most of them it is found most abundantly in the centres of parts—such as coagula in the blood-vessels—which are most remote from the supply of blood.

* Patholog. Anat. B. I.

† Prep. 3, Pathological Museum of the College of Surgeons. The specimen, which consists of the urinary organs of an Argus Pheasant, was exhibited and briefly described in the last lecture (Med. Gaz. vol. xl. page 97.) The difference in size between the renal artery supplying the large hypertrophied kidney, and that supplying the shrunken and atrophied one, is very striking.

* Mumer's Physiologische Scheikunde, 1848, page 351.

† The term applied by Mr. Bowman to the elementary particles of which striped muscular fibre is supposed to consist.

In conclusion of this subject, it may be proper to state that there appears no necessary, or even frequent, connection between the fatty degeneration of any organ in particular, and that general tendency to the formation of fat which constitutes obesity. No doubt a person who has a natural tendency, even when in health, to become corpulent, would, *ceteris paribus*, be more likely to have fatty degeneration than to have a wasting atrophy in any organ which might fall into the conditions in which these changes originate. And, as a general rule, spirit-drinking, and the excessive use of other hydro-carbonous articles of food, while favouring a general formation of fat, does, also, often give rise to special fatty degeneration in the liver, or some other organ. Yet, on the other hand, one commonly finds the proper elements of all the tissues—the heart, the liver, and the rest—quite healthy in men who are very corpulent. The muscular fibres of the heart, or of the voluntary muscles, may be imbedded in adipose tissue, and yet may be themselves free from the least degeneration. So, also, the hepatic cells may be nearly free from fat within, though there be much oil around them. Fat accumulated in tissue round a part is a very different—probably an essentially different—thing from fat within it; the one is compatible with perfect strength, the other is always a sign of loss of power. In the muscles of some fish—the eel especially—it is hard to get a clear sight of the fibres, the oily matter round them is so abundant: but the fibres are peculiarly strong, and, in their own texture make a striking contrast with the fibres of a degenerate muscle, in which the fat is, in great part, within.

The same essential distinction between general and local fat-formation, though they may often coincide, is shown in the fact that the local formation very often happens in those whose general condition is that of emaciation. It was so, in the cases of paralysed lower extremity with diseased hip; of the fatty pancreas,—in a case of osteoid tumor, with fatty liver,—and in the cancer of the spleen in a patient emaciated with cancer of the breast.

On the whole, therefore, we must conclude that something much more than a general tendency to form fat, or a general excess of fat in the blood, is necessary to produce a local fatty degeneration. The general conditions are favourable, but not essential, to this form of atrophy.

Original Communications.

ON THE NATURE AND PRINCIPLES OF TREAT- MENT OF INFLAMMATION,

AND THE ALLIED DISORDERS OF THE
CIRCULATION.

BY GEORGE ROBINSON, M.D.

Fellow of the Royal Medical and Chirurgical Society, formerly Lecturer on General Pathology in the School adjoining St. George's Hospital, and now Lecturer on Forensic Medicine in the Newcastle-on-Tyne Medical School.

[Continued from p. 631, of last volume.]

PART XI.

Of the Treatment of Inflammation.

THE local measures by which the unnatural pressure of the obstructed capillary blood-columns is relieved are—

1. The escape of a portion of the compressed blood through apertures occasioned either naturally by their rupture from excessive distension, or artificially, by acupuncture, incisions, leeches, &c.

2. The escape of the liquor sanguinis through the pores of the capillaries.

3. The use of derivatives.

In some forms of acute inflammation, as in gastritis and other cases in which a mucous membrane is the seat of the disease, the morbidly increased lateral pressure of the accumulated blood is sometimes spontaneously relieved by free hæmorrhage, the result of the rupture of the distended vessels. But it is of course only in certain inflammatory affections of the superficial structures of the body that it is possible to imitate by punctures and scarifications this natural method of cure.

The effusion of the more liquid portion of the blood through the pores of the distended vessels relieves the intensity of the compression of the detained fluid almost as completely as its escape *en masse*. And for the sake of obtaining that present relief effusion is perhaps too frequently encouraged by the local application of warmth and moisture. Now when it is remembered that every atom of the effused matter must be absorbed before a perfect cure can be effected, it is, I

think, almost a self-evident proposition that in general the effusion should be limited to the smallest possible amount, and where practicable should be altogether prevented. Were it not for the difficulties which we encounter in attempting to accomplish the removal of the local effects of inflammation, our treatment of it would always be certain and rapidly successful: for we could in every instance soon relieve the intensity of the blood's pressure in the affected vessels. But the absorption of any considerable quantity of extravasated liquor sanguinis is invariably a work of time; and where the fibrinous portion has become firmly coagulated, or at all organised, our most potent remedies in the hands of the most skilful practitioner will often fail to relieve the adjacent structures of the substances thus forced amongst them. There is, therefore, every inducement to prevent as far as possible the occurrence of any sanguineous or fibrinous infiltration of the tissues of the affected part.

Effusion is, however, sometimes very useful as a derivative agent, where it can with propriety be obtained from vessels situated at a little distance from, but communicating freely with, those which are the seat of the inflammatory disorder. And a good instance of its beneficial operation under these circumstances is presented in the success attending the early administration of purgatives in peritonitis. The results of medical practice here harmonize very beautifully with some experimental observations (related in Magendie's Journal), in which on exposing and irritating a fold of mesentery, the redness caused by the enlargement and distension of the peritoneal vessels rapidly disappeared when free effusion took place from the adjacent mucous membrane. And the mode of action of all other derivatives, such as leeches, cupping, blisters, &c. in relieving the engorgement of the affected vessels, is precisely similar. If, however, any considerable quantity of blood or serum be thus abstracted, it will of course, in addition to its local action, also tend to diminish the general pressure of the arterial blood. It is scarcely necessary to add, that effusion, as a derivative agent, is admissible only in situations where the arrangement of the vessels is such as to allow

of a free discharge and ready removal of the extravasated matters: in the use of counter-irritants we are therefore necessarily restricted to the skin and mucous membranes.

Having thus reviewed the operation of the remedies calculated to relieve that local disorder of the circulation which constitutes the essence of inflammation, we have in the next place to consider the means by which the removal of the immediate effects of that disease is accomplished. But before entering upon this subject it may be observed, that we occasionally have it in our power to prevent, or at least limit, by the direct application of mechanical support, the escape of the compressed fluid through the coats of the distended vessels. Effusion, as before mentioned, can only occur when the pressure acting on the internal surface of the minute porous vessels preponderates over that operating on their exterior. By artificially increasing the amount of this latter force, at the same time that we diminish the lateral pressure of the obstructed blood-columns, we are therefore often enabled to exercise a direct as well as an indirect influence in checking the process of effusion. And in inflammatory affections of the superficial structures and organs of the body, where pressure can be directly applied, an observance of this principle will sometimes materially expedite the recovery.

In discussing the various questions connected with the nature of inflammation, I more than once had occasion to enumerate its immediate effects, the removal of which, next to the alleviation of the morbid state itself, constitutes the chief object of our treatment. The physiological action most concerned in this restorative process is vascular absorption, or that function by means of which fluids placed in contact with the external surface of the blood-vessels traverse their coats, and so enter and mingle with the mass of circulating blood. In the application of our remedies during this stage of the treatment, we have therefore to attempt—1st, to facilitate and assist, by every means in our power, the absorbing process; and 2dly, to promote the solution of such effused matters as may have become solidified, and so render them capable of absorption. Before, however, this physiolo-

gical process can be employed with much success or certainty as a remedial agent, we must possess a clear and definite knowledge of the seat, the active cause, and the mechanism of absorption. And on these points there exists among physiologists some difference of opinion.

The doctrine now generally received, both in this country and on the continent, is that advanced by Magendie and others, who refer the act of absorption to an affinity of the vascular walls for the matters absorbed; the absorbing power of the capillary membrane being, in their opinion, assisted by the unequal density and viscosity of the fluids situated on either surface. Against this doctrine I have, on a former occasion, advanced various objections: amongst others—

1. That the laws of endosmosis and exosmosis apply only to stagnant fluids, and not to rapidly-moving streams, like those traversing the capillaries;

2. That it does not explain how, in certain parts of the body, one or other action, namely, either effusion or absorption, wholly preponderates;

3. That the force which it supposes to operate is not sufficiently active to cause that rapid absorption which we so often witness;

4. That it leaves us as ignorant as before of the immediate cause of absorption, and is therefore practically useless in guiding our employment of that process as a remedial agent.

Conceiving, therefore, that neither the porosity of the capillary walls nor the difference in the physical properties of the fluids situated on either surface of that membrane, constituted a satisfactory explanation of the mechanism of absorption, I proceeded to inquire how far *the motion of the blood* might be employed as the active cause of this important process; and, from an examination of the general absorbing power possessed by all moving fluids, and a comparison of the physical conditions most favourable to the operation of this power with those regulating the passage of the blood through the cylindrical capillaries and adjacent venous radicles, I considered myself justified in advancing an opinion "that the active power employed in the animal body for the performance of absorption resides in the currents of

blood which incessantly traverse the veins and terminating portion of the capillaries.*"

The grounds on which I am for the present content to rest this opinion may be thus enumerated:—

1. It is an established physical law that all freely-moving currents exercise an absorbing power, or, in other words, draw with them any stagnant fluid with which they may directly or indirectly come in contact, this power being proportioned to the rapidity of their motion.

2. It is an evident fact that the streams of blood do traverse the minute blood-vessels with very great velocity.

3. The anatomical arrangement of the terminating portion of the capillaries, and the conditions regulating the passage of the blood through the veins, are such as to facilitate the motion, and, consequently, increase the absorbing power, of the minute blood currents.

4. The tenuity and porosity of the capillary walls being also demonstrable, it must be admitted as perfectly possible for the freely-moving streams traversing those minute vessels to exercise through the intervening pores their power of lateral draught upon any external stagnant fluid.

As this doctrine refers absorption to the motion of the blood, as its direct and active cause, we are by it at once enabled to understand why absorption invariably ceases as soon as the circulation through a part is arrested,—a fact established by numerous experiments. And, as the absorbing power of the minute blood-streams operates by diminishing the pressure acting on the internal surface of the capillaries, it is moreover in perfect harmony with those observations of Magendie, in which he found the rapidity of the absorbing process to be increased by vascular depletion. The mode of operation of this important law is indeed rendered more intelligible by it than by the general doctrine of absorption propounded by that illustrious physiologist himself.

It will be seen that the essential difference between the opinion of Magendie on the mechanism of absorption, and that which I have ventured to

* MED. GAZ. 1844.

advance, consists in this circumstance—that, whereas he considers the active power employed in this process to reside in the capillary membrane, and that the streams of blood merely carry away the fluids which that membrane has absorbed, I claim for the rapidly moving blood-columns the chief, the prime, the active share in the operation, and regard the intervening membrane as perfectly passive, contributing nothing more than its porosity towards the performance of the function. The power of lateral draught exercised by freely moving streams has been mentioned by various writers on Natural Philosophy as probably assisting the circulation through some of the communicating venous branches; but I am not aware of any other physiologist having adduced it in explanation of the mechanism of absorption, by supposing it to act through the pores situated in the capillary walls upon any external fluids.*

In order, then, to obtain the absorption of the matters effused during inflammation, we must in every case increase, as far as possible, the *general* absorbing power of the capillary blood-currents, while we at the same time apply, wherever practicable, local remedies, calculated either to augment the pressure acting on the exterior of the affected vessels, or to promote the activity of the circulation through them. The first object is accomplished by a persistence in the use of evacuants, and by continuing to limit the quantity of ingesta; the effect of this diminution of the bulk of the circulating mass being a more free and unimpeded passage of the blood through the capillaries, whereby both the activity of the absorbing process and the extent of absorbing surface are materially increased. Some of the chief *local* measures by which we endeavour to aid the natural powers of absorption in the affected part have been already alluded to as useful in preventing effusion. Such are the application of

cold and astringents, mechanical support, by means of bandaging, strapping, &c. To these may now be added friction, which, however, when employed for this purpose, should not be confined to the mere surface of the skin. A gentle, continued, kneading pressure, following the course of the venous blood, is much more efficacious, and, in some forms of subcutaneous effusion, exercises a marked influence in accelerating the removal of serous fluid. Blisters, and various internal remedies, used for the dispersion of the immediate effects of inflammation, seem to me to operate rather by promoting the solution of the effused and solidified fibrine than by contributing any direct aid to the absorbing process.

It is evident that any measures which tend to remove the products of effusion by adding to, and co-operating with, the natural powers of absorption, can be successful so long only as those matters retain a certain degree of fluidity: for the passage of a mass of solid fibrine through the minute pores of the capillary membrane is clearly a physical impossibility. Now, whilst in the transparent gelatinous state, which it retains for some time after its effusion, the fibrine of the liquor sanguinis is, I believe, capable of very rapid absorption. And, in support of this opinion, I may mention an experiment, performed by me some years since, in which a quantity of extremely tenacious semi-gelatinous ov-albumen, very similar in physical appearance to recently effused fibrine, was introduced into the peritoneum of a rabbit; and on killing and examining the animal a few hours afterwards, not a particle of it was to be found. In the treatment of inflammation we have, therefore, every inducement to be prompt and vigorous in the use of remedies calculated to accelerate the absorbing process, inasmuch as the delay of a few hours may convert a semi-fluid mass, capable of speedy absorption, into a solid unmanageable substance, which, prior to the possibility of its removal, must undergo a tedious and uncertain process of digestion.

It is not my intention to dwell at any length upon the action of the particular remedies by which we endeavour to promote the absorption of

* Dr. C. J. B. Williams, in his *Principles of Medicine*, page 271, represents me as having illustrated, by some experiments, views on absorption advanced by him in his *Gulstonian lectures*; the substance of which appeared in the *MEDICAL GAZETTE* (July 1841). I have carefully examined the communications referred to, but have failed to discover in them any opinion on the nature or mechanism of absorption differing from that of Magendie.

solidified fibrine. The preparations of mercury and of iodine, and the alkaline salts, which are the substances generally administered in these cases, can but indirectly assist absorption by aiding the solution of the effused matters. The relative power of these agents, and the conditions under which they operate with the greatest activity, are points on which we do not possess much positive information, and from their great practical importance it is highly desirable that they should be made the subject of further investigation.

We have now noticed the two chief principles to be observed in the treatment of acute inflammation. Were it possible by any medicinal agencies to directly remove the capillary obstruction, which constitutes the immediate cause of the disease, the early adoption of such measures would, of course, be imperatively called for. But as the attainment of this object is, in the majority of cases, clearly impossible, we are compelled to limit our efforts to the prevention and removal of the injurious effects resulting from the existence of that local impediment to the circulation. Most of the remedies, however, employed for this purpose also exercise a considerable influence in accelerating the disintegration and softening of the coagulated blood-columns, and thus facilitate the re-establishment of the circulation through the affected vessels. Some of those just mentioned as useful in promoting the removal of the solid products of effusion have, more especially, been long celebrated for their *deobstruent* powers.

As the first stage of inflammation, or that characterised by effusion, ceases with the solidification of the columns of blood occupying the affected vessels, and as the present inquiry is not intended to embrace the study of more than that stage of the disease, I shall not further pursue the examination of the treatment of its acute forms. In accordance with the plan laid down at its commencement, I have throughout this investigation studiously avoided any discussion of the many important circumstances which determine the nature of the secondary effects of inflammation. And from the same desire to exclude, as far as possible, all sources of complication, even those more ob-

vious chemico-physical peculiarities of the circulating fluid which tend to modify its immediate and primary effects have been passed over in silence. I repeat this explanation, because I might otherwise be supposed to recognise, in all cases of inflammation, none other than the purely physical disorder of the blood, which arises from the local obstruction to its passage through the capillaries.

[To be continued.]

CASE OF SPONTANEOUS CURE OF ASCITES, COMPLICATED WITH OVARIAN DISEASE.

By FREDERIC D. DYSTER.

ANTONIA DAS SANTAS: married, wife of a vine-dresser, aged 39. Has had nine children at the full-time, four miscarriages, and several abortions. She had been ill for six months when she first came under my notice, in Dec. 1842. She dated her illness from a miscarriage at the sixth month of pregnancy, in June of the same year. Her recovery from this was favourable, but she perceived very shortly afterwards a tumor, of the size of which she could not give a clear account, in the right iliac region. When I saw her this tumor was entirely masked by the ascites, for the removal of which she applied. She was a thin, pale, anæmic woman, considerably emaciated. Tongue clean; urine high coloured and scanty; skin dry but cool; bowels inactive, with scanty clay-coloured stools; pulse feeble, about 84, and small, none at the left wrist, (she was herself aware of this, and said it was always so); considerable dyspnoea, especially when recumbent; lungs healthy; heart sounds natural, but feeble, and almost no impulse. Her general state forbade any very active treatment, but purgation was pushed as far as possible; diuretics of all sorts were tried, but not the slightest good effect was produced. The catamenia had not appeared since her confinement. The fluid in the abdomen speedily increased, and the woman was sinking, in Feb. 1843. She was tapped, and twenty-eight pints of

straw-coloured fluid withdrawn. She bore the operation well; and, on examination an ovarian tumor became apparent, about the size of a foetal head at the eighth month, which was perfectly moveable very insensible, intensely hard and lobulated, conveying to the touch a distinct impression of several cysts. The fluid from the abdomen was highly albuminous. From Feb. 1843 to May 1846, she was tapped ninety-eight times, the quantity of fluid varying from 28 to 38 pnts (of 3xx.) During this long period, whenever her general health permitted, I placed her under treatment; but this did not appear in the slightest degree to affect the disease. The ovary slightly increased, and in May 1846 it had attained the size of a newborn child's head. At that time her general health had so much improved that I resolved to try the effect of large and repeated doses of croton oil, and I made provision for her accommodation at my house, while the treatment was going on. She came to me after a much longer interval than usual; and, on taking her out of her hammock, I found, to my utter astonishment, that the abdomen was perfectly free from fluid. On inquiry, she told me it had never accumulated since I last tapped her. She had had a slight attack of diarrhoea, which yielded, without treatment, in 48 hours. Her skin was as dry as ever; the urine very little, if at all, increased. Her reason for coming to me was a trivial attack of bronchitis, which yielded in a few days to simple remedies. The woman remained in perfect health from that time till I left Madeira in May last, when her only complaint was the inconvenience arising from the enlarged ovary, which, however, had not increased to any appreciable extent.

This case offers two instructive circumstances; the first consisting in the capricious and unaccountable exercise of the vis medicatrix naturæ; and the second, leading us to receive with extreme caution any report of extraordinary curative effects referred to medicinal agents. Had my poor patient survived the ordeal to which I was about to expose her (and her life was such a burden to her that I consider that I was justified in attempting it), the cure would have been attri-

buted by me, and probably by many others, to the effect of the croton oil: how unjustly, the issue of the case now shews.

ON THE CONSTRUCTION OF THE PLACENTA,

AND THE MODE OF COMMUNICATION
BETWEEN THE MOTHER AND
THE FŒTUS IN UTERO.

By FRANCIS ADAMS, LL.D., Surgeon,
Banchory.

It cannot but appear remarkable that, considering the industry and success with which Fœtal Anatomy and Physiology have been cultivated, both in ancient and modern times, there should still be the greatest discrepancy of opinions among anatomists regarding the structure of the human placenta, and that physiologists should be equally at variance as to the mode by which the fœtus draws nourishment from its parent. The Hunters, indeed, were long supposed to have finally settled both these questions; but of late years it has been admitted by almost every original inquirer who has re-examined the subject, that a considerable portion at all events of the Hunterian hypothesis is based on erroneous principles,—so that it must either be rejected altogether, or be subject to several important modifications. Still, however, no well-defined theory has been established in the place of it, and deductions have been recently given by eminent authorities on anatomy, containing the most contradictory statements as to the facts of the case; so that altogether the subject of the placenta may be justly pronounced to be the great *opprobrium medicorum*. What makes this state of opinion the more to be lamented is, that indisputably the subject is one of the utmost importance, as affecting the practical views of the physician and surgeon in urgent cases of almost daily occurrence: for example, the rules for the management of uterine hæmorrhage as laid down by our highest authorities in midwifery during the last sixty or seventy years, are all founded upon the Hunterian hypothesis; and if it be now admitted to be untenable, it is surely the duty of every obstetrical practitioner

to reconsider his principles of treatment, and abandon those which are based on a false doctrine. In the papers published by me in the *MEDICAL GAZETTE*, during the years 1845 and 1846, "On Floodings after Delivery," I took it for granted that the Hunterian hypothesis had now been fairly given up; but a very respectable writer in the same periodical, Mr. Copeman, while he entirely concurs in my practical views, still stands up for the doctrine of the Hunters, and apparently makes out a strong case to prove that he is not singular in holding to this creed (Nos. 964, 966). I think myself called upon, therefore, to state explicitly the grounds upon which my own opinions are founded, and shall embrace the present opportunity of reviewing the literature of the whole subject, from the earliest times down to the present period. This seems to me to be the only legitimate way of setting the question set at rest; for when all the views which have been ever entertained on it are fairly before us, there are certainly some admitted tests of truth which will enable us to decide what opinions are true and what are based on error. I shall endeavour to execute my undertaking within as narrow bounds as possible, by confining my attention to such doctrines as possess importance from having been extensively received,—dealing only with the larger facts of the case, and avoiding all prolixity of detail, or the use of terms not properly defined. I propose, then, to divide the literature of the subject into five periods, giving—1st, The opinions which prevailed anciently, and down to the discovery of the circulation by Harvey; 2d, The opinions held by Harvey and his followers; 3d, The opinions held by the physiologists of the eighteenth century, and more especially by Haller and the Hunters; 4th, The opinions held by Dutrochet, Velpeau, and others; 5th, The opinions held by the advocates of the Cell theory at the present time.

PERIOD I.—On the opinions which prevailed anciently and down to the discovery of the circulation by Harvey.

The opinions advanced in several of the Hippocratic treatises, as *De Natura Hominis*, *de Natura Pueri*, *de Septimeti*, *de Octemestri*, &c. &c. I shall not dwell upon at any length, as it is now generally acknowledged

that these works are not the genuine productions of the great Hippocrates, and the physiological doctrines contained in them are crude and not very well defined. I may just mention that the original of the embryo is there assumed to be the male semen,* but that the earliest appearance of the fœtus in the uterus is pretty accurately described, as being enclosed in its chorion, which is said to be a membrane like that which incloses the egg within the shell, and through which membrane blood is said to be absorbed for the nourishment of the fœtus (p. 386, 387, ed. Kühn). The fœtus is further said to breathe by means of its umbilical cord (p. 388). The opinions advocated by Aristotle on this subject are of a general nature, and the text in the passage containing the fullest exposition of them appears to me to be corrupt (*de generat. animal.* ii. 7.) He would seem to have derived his information on this subject mostly from observations made, either by himself or his predecessor Democritus, on sheep and cows, as is evident from his description of the cotyledons, a term which, like many others, he misapplies to the human placenta, and represents them as being the instrument by which the fœtus derives a sanguineous pabulum from the mother.† The appearance of the chorion he describes with considerable accuracy (*l. c.*) We shall pass on, however, to Galen, who is the great ancient authority on physiology, the principles of which he may be said to have fixed during fourteen succeeding centuries, that is to say,

* I may just mention that this system of embryology, although now entirely exploded, found an able advocate towards the end of the 17th century in the celebrated Anthony Leeuwenhoek, who strenuously attacked the doctrine of Harvey and De Graaf, and thought he had proved, from microscopical observation, that the male semen, and not the female ovum, is the original of the embryo in all animals. His treatise on the subject, entitled "*Anatomia et Contemplationes*," is undoubtedly the best defence of the Hippocratic hypothesis which has appeared in modern times. I am glad to see it announced that the Sydenham Society propose to publish the works of this very original observer.

† The term *cotyledon* occurs in the Hippocratic collection. It is often misunderstood and misapplied both in ancient and modern works on Fœtal Anatomy. It cannot, strictly speaking, be properly applied to any other animal except the ewe. The term is derived from *κόρυς*, which was originally applied to the acetabulum, or cavity in which the head of the femur is rotated. See Homer, *Iliad*, v. 805.

during the remainder of the period of which we are now treating. He devotes an entire treatise to the investigation "Of the Formation of the Fœtus in Utero," (vol. iv. p. 652), and also treats of it at considerable length in his great work "On the Uses of the Parts," and in other of his works. Now it is beyond all doubt that he holds there is a direct communication between the mother and the fœtus, by means of an artery and vein running from the uterus into the placenta. The rationale of his doctrine on this point will be readily apprehended by any one who rightly understands his general theory regarding the arteries and veins, which was briefly this,—that every part of the animal frame is supplied with spiritual or ærated blood by means of arteries, and with alimentary blood by veins—the one to maintain its innate heat, and the other to provide its pabulum. Galen, then, adopting the Hippocratic dogma, that the male semen is the original of the fœtus, naturally enough supposed that it must derive both its spiritual and alimentary blood from its mother through the usual channels by which the parts of the adult body are supplied with them. He states distinctly that the chorion is not connected with the uterus at any other point, except where the bloodvessels of the mother enter. He further compares the vessels which unite to form the umbilical cord, to the roots of a tree; and those which proceed to the liver of the fœtus, to its branches.

The treatises referred to above contain also many curious observations, correct description of parts, and ingenious speculations in philosophy; but all these we must pass over as not bearing directly on the point which we have more particularly under consideration. From what we have stated, then, it will be clearly seen that Galen decidedly maintained that there is a vascular connection between the mother and fœtus in utero. Galen being, as it were, the autocrat on professional subjects, during many succeeding ages, it would be in vain to look elsewhere for anything original, either in observation or speculation, during the whole of this period. We may just mention that the same descriptions and the same hypotheses, with little or no variation, are given by

Aëtius, one of his more immediate successors, who appears to hold very decidedly that the vessels of the cotyledons are formed from the prolongations of the uterine artery and vein into the semen, and that from the reunion of them the umbilical cord is constituted.* This hypothesis was held as late as the beginning of the 17th century by Fabricius of Aquapendente, the celebrated master of the still more celebrated Harvey, who keenly defends it against the strictures of Arantius, the only physiologist, as far as I am aware, during the whole of the period which we are treating of, that had ventured to call in question the dogma of Galen. Fabricius thinks he silences Arantius most effectually by a mode of argumentation, which, at all times, carries great weight with ordinary minds, who find it extremely convenient to escape from the labour of reflection and observation by taking shelter under the authority of great names. "Am I," he says, "to embrace this opinion along with a single individual in preference to so many learned men who have maintained the contrary?" It is but justice, however, to the memory of Fabricius, to state that even at the present day there is scarcely a work more replete with original matter on the subject now under consideration than his treatise *de formato fœtu*. In it he has described and delineated most faithfully the appearances of the fœtal and maternal apparatus connected with gestation in a great many animals; so that, if he missed the truth himself, he deserves credit for having forwarded the progress of others in the search of it, and as by his descriptions and demonstrations of the valves of the veins he brought his pupil to the very verge of his discovery of the circulation, so by his labours on fœtal anatomy and physiology he had the merit of leading Harvey and his followers to the adoption of those very sound views which, as we shall presently see, they entertained respecting the connection between the mother and the fœtus in utero. And at the same time we may

* Opera xlii. 2, 3.—The original of this part of the works of Aëtius has never been published, but through the kindness of a learned friend in Oxford, I obtained a copy of the two chapters referred to above, from the MS. belonging to the Bodleian Library.—*Cod. MS. Bodl. Canon.* Gr. 109, f. 330.

draw a useful lesson from his mistakes; as, for example, the following is a memorable instance of the influence which preconceived opinions have in dictating the mental vision, and making a man of even a cultivated mind believe that he sees things exactly as he fancies he should see them. Fabricius affirms, as if from personal observation, that in the bitch, the ewe, and the cow, the vascular connection between the uterus and fœtus can be readily recognised, and he infers that this connection must exist in all other animals of the same class, although it cannot be so easily demonstrated in some of them.* How egregiously Fabricius deceived himself on this point we shall have an opportunity of proving demonstrably in the next section.

PERIOD II.—*Opinions held by Harvey and his followers.*

Harvey having disturbed the established opinions on so important a subject as the functional office of the arteries and veins, it was naturally to be expected that many other settled doctrines in physiology which hinged on the old theory should be destined to undergo a corresponding modification. This was accordingly the case with regard to the subject now under investigation, which, moreover, was one to which Harvey had devoted most particular attention, as being connected with his investigation "On Generation." This work accordingly abounds with most interesting observations on the connection between the mother and fœtus, and, moreover, evinces a very respectable acquaintance with polite literature and the higher philosophy of the ancients; so that, even at the present day, it may be read with much interest and improvement. The only thing which prevented Harvey from taking a correct view of this subject was his scepticism with regard to the discovery of the *lacteals*, which had been demonstrated by Aselli a few years previous to the announcement of his Theory on the Circulation.† His views, then, are in some respects not so complete and accurate as those of his immediate successors who adopted this discovery—I mean De Graaf,‡

Ruyach,* Needham,† Swammerdam,‡ Drelincourt,§ Bartholinus,|| Steno,¶ Hoboken,** and Malpighi,††—illustrious names!—whose works every person who would wish to understand perfectly the physiology of generation will find it to his delight and amusement—

"Nocturnâ versare manu, versare diurnâ."

These distinguished inquirers take the only method which ever can lead to a correct and comprehensive view of the structure and functional office of the human placenta—namely, by studying its analogues through the whole class of Mammals, from its lowest and simplest form, up to Man. No one who is at all familiar with their works can fail to recognise the advantage of thus taking a general view of the whole subject, and tracing a certain type of structure through all the orders of the class. My necessary limits on the present occasion preclude me from doing anything like justice to the enlightened views contained in their works, and I must content myself with giving such an outline of their opinions as, I trust, will serve to make them intelligible to the reader. I shall at all events, without further preamble, now attempt an abridged exposition of what they have written regarding the connection between the mother and fœtus, in the orders *Ruminantia*, *Rodentia*, and *Bisulca*, taking under each head the guidance of the author whom I look upon as being the most successful in his method of illustrating it. On the ruminants, I shall principally follow Hoboken, whose treatise "*de Anatomia Secundinæ Vitulinæ*" I look upon as being the most complete monograph on a single subject in physiology with which I am acquainted. According to him, in the earlier months of gestation the embryo is entirely nourished by means of a gelatinous juice, which is secreted by the womb, and imbibed by the pores of the chorion. At some period of the process, not stated by Hoboken, and never exactly determined by myself, the

* *Observationum de Ove, &c.*

† *De formato fœtu.*

‡ *Miraculum Naturæ.*

§ *De conceptione Adversaria.*

|| *De Ovaris Muller.*

¶ *Acta Medica Hafniensia*, vol. i. p. 210.

** *De secundia vitulin.*

†† *De Utero, &c.*

* *Op. cit.* ii. 3.

† See the English edition lately printed by the Sydenham Society, pp. 604-5.

‡ *De mulier organa*, 18.

parts of the vaccine secundines which are the analogues of the human placenta are formed in the following manner:—The umbilical vessels immediately after issuing from the navel of the fœtus, divide into from 60 to 80 ramifications, which radiate to the circumference of the ovum, and then attach themselves to as many points on the chorion, where they gradually are formed into those protuberances called the *fœtal cotyledons* by the ancient physiologists, and *caruncula* or *placentule* by Hoboken, Needham, and other physiologists of that age. Corresponding to, and in intimate connexion with, these placentule, there are an equal number of cellular protuberances on the inner surface of the uterus, called *glandula* and *uterine cotyledons* by the physiologists, these being all formed by the increased development of the uterine structure, in consequence, no doubt, of a stimulus imparted by the placentule. It is of the utmost importance, then, to remark that Hoboken has clearly described and delineated the chorion as surrounding the whole of the secundines, including these *placentula*, which last are therefore completely separated from the maternal parts in contact with them by a fold of the chorion; so that neither do the umbilical vessels of which they are principally composed protrude through this membranous envelope, nor do any of the uterine vessels enter it from without: in a word, Hoboken, De Graaf, Malpighi, and all the others referred to above, are agreed in holding that there is no vascular connexion between the cow and her calf, and that the latter is nourished not by the blood of its mother, but by an alimentary juice secreted from it. The process by which this nutritious fluid is separated from the maternal blood, and is transmitted into the fœtal apparatus of vessels composing the placentule, is compared by Hoboken to filtration and transcolation, although, at the same time, he does not fail to intimate that these terms are used in a figurative sense. In this account of the cotyledons, fœtal and maternal, and their functional offices, Hoboken is supported by all his contemporaries, and most especially by Malpighi, who gives a very accurate description of these parts in his work "*De Utero et Viviparorum Ovis*." The *glandula* or

maternal cotyledons, he says, are liberally supplied with arteries and veins which secrete "a copious juice like to ptisan." He also describes most graphically the *placentula*, and the appearance they put on if slowly separated in water from the *glandula* to which they are connected, when the radicles of the placentule may be seen divided into numerous capillaries, which present the beautiful appearance of a forest. These radicles or tufts, he distinctly says, are every one of them supplied with branches of blood-vessels from the fœtus. Hoboken, in like manner, states, that these vessels of the placental tufts consist of an artery and a vein. Hoboken, entertaining the views which we have described of the complete separation of the placentule of the fœtus from the adjoining parts of the mother, approves highly of Aristotle's comparison of the former to the roots of a plant, which imbibe nourishment to the trunk through its pores (spongioles) without the aid of any vessels from without. With regard to the ruminants, then, these physiologists regard it as being proved by actual observation that there is no vascular connection between the mother and the fœtus, and that the latter is nourished by means of a nutritious fluid secreted from the blood of the mother. And here I may be permitted to observe that, having had ample opportunities of verifying these statements, I am quite satisfied of their correctness, and in particular I can have no doubt, from my own personal observation, that the *placentula* are inclosed in a fold of the chorion, and the *glandula* covered by the lining membrane of the uterus; that consequently there is a most complete separation of the maternal and fœtal parts, and therefore that there is no rupture of vessels at the delivery of the secundines.

[To be continued.]

PERIOD OF GESTATION.

In the case of *Catterall v. Catterall*, decided last week in the Consistory Court, in which the husband proceeded against the wife for a divorce on the ground of adultery, the main proof was that a child had been born twelve months after the husband had left his wife in New South Wales for the purpose of proceeding to this country. Dr. Lushington, without entering into the question of protracted gestation, pronounced for the divorce.

MEDICAL GAZETTE.

FRIDAY, JULY 23, 1847.

WE believe that it would be much to the benefit of the profession and public, if a few medical men of good standing and experience were elected members of the new House of Commons. There is an excellent precedent for this, in the recent admission of M. Malgaigne to the Chamber of Deputies, and of M. Flourens to the Chamber of Peers, in France. The proposition may appear strange to the English public, simply because it is novel; but we are at a loss to know why members of the medical profession should be excluded, while the law can boast of having its one hundred or one hundred and fifty representatives. We think we are not overstating the fact, when we assert that men who either practise the law or have been called to the bar, constitute in general from one-sixth to one-fourth of every House of Commons! To what can this difference in favour of *legal* members be referred? to greater practical knowledge of legislation,—a wider range of intellectual acquirements on all subjects connected with the social and sanitary condition of nations,—or to the assumption that they can spare from their avocations a larger amount of time for the benefit of the public? We think that the partiality of constituencies for lawyers can be explained by a reference to none of these conditions. The notorious bungling in the provisions of statutes, whereby the most simple enactments are rendered confused, judges are puzzled, and suitors ruined, is a sufficient answer to the first suggestion. I must be clear to all, that when

acts are continually receiving the sanction of the Legislature for the purpose of amending, explaining, and correcting the mistakes of previous acts, either the special knowledge of the legal members is not brought to bear on legislation, or they are incapable of guiding the senate on subjects to which it is assumed they have directed their professional studies. In either case, there is only one inference to be drawn: the members of the *legal* profession cannot claim the preference of seats in the legislature, by reason of their greater practical knowledge of the art of making useful and permanent laws. They have had a sufficient trial in this respect, and the result is an utter failure. It is, we think, obvious that no good law can be enacted without a thorough and practical knowledge of the subject on which it is proposed to legislate. If sound legislation consisted in a due observance of technical forms, we could understand why lawyers should be preferred to medical men as members of the senate: but experience has shown that in order to benefit a nation, results must be regarded; and that no technicalities can render an act beneficial, which from ignorance of the subject, on the part of those who have to settle its provisions, falls short of the objects for which it has been enacted.

While we concede to members of the bar, that on many subjects of general interest they have an advantage over medical men, we must insist upon the fact, that in others they are lamentably inferior to them. Take, for instance, the great questions of quarantine and contagion,—the medical attendance of the poor,—the regulation of lunatics and the government of lunatic-asylums,—the numerous questions connected with medical police and sanitary legislation, including the improvement of the

health of towns by better drainage and sewerage, and by the abolition of intramural interments, with numerous other subjects of the like nature. Whenever important questions of this kind are brought forward, the non-medical legislator must rely upon the last pamphlet which happened to come before him, or upon certain loose statements which appear to lend support to his own pre-conceived views. Is it surprising, therefore, that questionable medical doctrines should be introduced into a speech, or that a statement should be made by an honourable member upon some medical authority, when the facts turn out to be precisely the reverse? We have known it seriously argued by a senatorial advocate of intramural interments, that the foul exhalations of metropolitan cemeteries were not injurious to health, because one or two families had lived for years near one of these graveyards, and had not suffered from illness! It is only recently that, in reference to quarantine, we have had occasion to point out the contradictions in which sensible persons may involve themselves, who discuss subjects with which they can barely have even a theoretical acquaintance. A non-medical member of the House of Commons stated as a reason for the abolition of quarantine, that African fever was not infectious. In support of his opinion, he quoted the authority of a gentleman who has since proved by facts that the fever to which the honourable member referred, had spread by infection of the most virulent kind!* There is an old saying, which is considered to be true—*cuius in sua arte credendum est*; but the House of Commons appears to act on the opposite principle; for the most absurd and contradictory statements connected with medical polity, practice and doctrines, find, among the mem-

bers, ready circulation and belief. We believe that this arises entirely from the medical profession being unrepresented in the Legislature. Thus, then, with regard to the second supposed advantage in favour of legal members, we can only admit its existence in so far as it applies to their own special pursuits; and, for a like reason, the advantage is decidedly in favour of medical men in reference to all questions connected with public health and medical police,—subjects which are now deservedly receiving much attention from Government, and which are likely to give rise to considerable discussion in a new Parliament.

A third, and apparently a more serious consideration is, whether medical men of eminence and repute, can find the time which is required for the proper performance of senatorial duties. We think, however, there is a sufficient answer to this objection in the example set by the legal members. It is notorious that these gentlemen, especially on the discussion of all legal questions, are to be found in their places: although, but a few hours before, they may have been engaged in unravelling an intricate cause in the Courts of Westminster, in defending a client at the Assizes, or in arguing a case before a Parliamentary Committee. In some instances, it is true, great public questions are postponed because certain legal gentlemen are on circuit; but the House receives these applications with such indulgence that it can hardly be so illiberal as to refuse a similar indulgence, on an occasional pressure of patients, to the members of another and not less useful profession. This objection to the admission of medical men, therefore, appears unfounded. There is no class of men so hard worked as practising members of the law; but still they contrive to find

* Vol. xxxix. page 997.

time for the discharge of their duties as senators; and, as it would appear, not only with great benefit to their own profession, but without injury to their practice. In fact, while there is every reason in favour of the plan of introducing *medical* members into the House of Commons, we know of no objection which can be urged against it, that would not be equally valid against the admission of representatives of the law. The great difficulty to be overcome is the novelty of the plan. The British public would require some time to become accustomed to the election of *medical* legislators; but we entertain no doubt that, in the end, the result would be beneficial. The Church, the Army, the Navy, and the Law, are well represented in the Legislature. Medicine, notwithstanding its importance in many departments of legislation, is alone excluded! Unfortunately the only path apparently open is political influence: men are not elected so much by reason of their knowledge on special subjects, as by their views on certain great political questions. It is here, then, we encounter a difficulty: there are few medical practitioners likely to prove useful in the senate, who would venture upon this fiery ordeal; and we cannot blame them. The feeling does not arise from deficiency of moral courage, but from a sense that it would be indecorous and unbecoming a member of the profession to canvass voters, and to go through the noisy proceedings of the hustings. The French are far less scrupulous on these matters than ourselves; nevertheless, we are rather curious to know how so eminent a surgeon as M. Malgaigne, and so eminent a physiologist as M. Flourens, have contrived to obtain seats in the two French Chambers. It would throw some light on the peculiarities of the electoral systems in the two coun-

tries; and it might pave the way for the admission of medical members to an English House of Commons.

In these remarks we have studiously avoided any reference to general politics. We have rested the claims of medical men to seats in the Legislature upon what we consider to be a far higher ground — the benefit which the community would derive from their services in the great questions relating to Public Health and Hygiène. A medical man who made himself a violent partisan on questions of general politics, would, we believe, command no respect for his opinions on subjects connected with his profession: his influence as a *medical* member of the senate would be endangered, if not completely neutralised. He would then come naturally in competition with others upon grounds in which his inferiority might be manifest; and if the shade of politics were to be made the test for the admission of members of the profession, we think that the senate might very well dispense with their presence.

There are some other points of view in which medical members might be found useful. Many attempts have been made to legislate for the improvement of the profession, but these have hitherto ended in failure. The subject has not undergone *within* the walls of Parliament, that discussion by men practically acquainted with the wants and wishes of all classes of the profession, which it assuredly deserves, and from which some permanent measure might be derived. Secondly, medical men are occasionally severely attacked in Parliament on the ground that they have been guilty of neglect or ignorance in the performance of their professional duties. There is no one to defend them, or to prove that the charge has originated in a mistake or a misunder-

standing on the part of the honourable member who makes the accusation. The character of a practitioner suffers, and he is left without redress. We need only point to the charges lately brought by Mr. Duncombe against Mr. Bossey, the medical attendant of the convicts at Woolwich, as an instance of this kind.* Mr. Bossey was charged with having perpetrated on his convict-patients almost every act short of *cannibalism*! Some of these charges were palpably absurd; and, had a medical man heard them, he could not have failed to point out, what the recently published report has proved, that they were inconsistent with each other, and gross exaggerations.† An attack was more recently made by the same honourable member on a highly respectable medical practitioner of Sheffield for an alleged improper performance of a public duty; and another instance presented itself during the last week, in which another honourable member made a severe attack on Dr. Laycock respecting the report on the sanitary state of York. This gentleman undertook a most toilsome and laborious investigation for the public benefit. As we understand, he received no pecuniary reward whatever; and there is sufficient evidence from the documents, that, in drawing them up, he was guided only by disinterested motives. Yet it appears to have been imputed against him that he was more than remunerated for his scientific services by receiving the thanks of the Council of the city of York! Had the Council paid liberally for these important services, there might have been some justification for public criticism on the part of the honourable member, who acted as their representative in the House of Commons; but as it is, we

think Dr. Laycock has been very harshly treated; and, like other medical men against whom charges are thus publicly brought in the House of Commons, he has no redress. The attack finds a wide circulation, and remains unanswered! Let us try to realise the fact, that a legal gentleman of good repute and practice, is charged with peculation, ignorance, or with an improper performance of his duties,—it is certain that he would immediately find in some of the numerous members of his profession, who have seats in the Legislature, men who were prepared and able to defend him; and the answer would be as widely circulated as the attack.

Lastly, the remuneration of medical men for their public services, including their attendance on the poor, is a subject which requires complete revision. It can never receive a satisfactory settlement so long as persons practically acquainted with the profession are excluded from any share in legislation.* There is a wide-spread discontent in reference to the tyranny of

* We take the following statement lately published relative to a district in North Wales:—

"It is perfectly evident that in the appointment of medical officers the physical possibility of their being even in a position to discharge the onerous duties of their respective offices is never inquired into, nor taken into consideration. The Carnarvon and the Bangor and Beaumaris Unions contain 37 parishes, with a population of at least 50,000 souls. The Anglesey district is upwards of twenty miles in length by seven or eight miles in breadth. It extends the whole length of the Straits of Menai, from Penmon eastward, to Llanddwyun Point westward. The Carnarvonshire district extends from Penmaen Mawr eastward to the confines of the Rival mountain westward—a district of country full thirty miles in length; and it extends from Carnarvon Bay and the Menai Straits southward to Capel Curig, and to the confines of Beddgelert and Dolbenmaem. Among the seven medical officers appointed for these extensive districts, abounding as they do with numerous poor cottier inhabitants, there is only one that keeps a horse, or that has, in the shape of a young lad, an apology for an assistant! In the Carnarvonshire districts, three out of four medical officers appointed reside at Carnarvon, and the remaining one at Bangor. Can it be supposed that men so situated can be in possession of suitable medical establishments, so as to enable them, even by possibility, to do that which common honesty and common humanity demand should be done?"

* Vol. xxxix. p. 237.

† In justice to Mr. Bossey, we intend shortly to bring the facts of this report before our readers.

exacting services by Act of Parliament, when the fees allowed are not even sufficient to cover the expenses which must be incurred by a medical man who honestly performs them! Such a system is not carried out with respect to the members of any other profession; and we think that it would be soon abolished if the voice of the medical profession were permitted to reach the legislature.

Reviews.

The Microscopic Anatomy of the Human Body in Health and Disease. Illustrated with numerous Drawings in Colour. By ARTHUR HILL HASSALL, M.R.C.S.E. &c. Author of a "History of the British Freshwater Algæ." Parts II. to IX. Highley: London, 1846-7.

We have already had occasion to express our high sense of the promise of Mr. Hassall's work on microscopic anatomy, as derived from a perusal of the first number: our examination of the fasciculi now before us has fully satisfied us that our favourable anticipation will be more than realised; we have rarely met with a work in which the debatable and scattered parts of a new science have been more sensibly argued, or more judiciously combined into something nearly approaching to the perfection of a complete system, than is the case in the present treatise. The second and third, and a portion of the fourth parts, are devoted to the completion of the article on the microscopical condition of the various constituents of the blood in their normal and morbid conditions. The principal subjects contained in the remaining pages of these numbers are Mucus, Pus; Milk; the Semen; Saliva; Bile; Sweat; Urine (the portions of this article devoted to the "Pathology of the Urine," would have been enhanced in value by a more full description of the various crystalline deposits thrown down by the urine under conditions of disease). These complete that portion of the work devoted to the microscopic characters of the fluids of the human body. The second part of the treatise

contains a description of the structural anatomy of the solids; Fat; Epithelium; Epidermis; the Nails; Pigment Cells; Hair; Cartilages; Bone; Teeth. The whole of these subjects are rendered highly interesting, not only by their intrinsic importance, but also by the author's lucid style of description, and by the aptness which he has shewn in applying the facts of microscopic anatomy to the illustration of many important subjects in physiology, diagnosis, prognosis, therapeutics, and medical police.

We shall extract a few interesting passages from the work, regretting that we are compelled to pass over many others, merely including them in the high praise which we consider to be due to the whole of the published portion of this treatise.

The following remarkable observation is contained in the article on the "Capillary circulation;" it deserves to be closely investigated by practical anatomists.

"I come now to record an observation, which, so far as I am informed, is without parallel. On one occasion, in examining the tongue of a frog, a portion of it broke away from the remainder; this I placed between two plates of glass and submitted to an examination, when, extraordinary to say, it was perceived that the circulation was still vigorously maintained in the majority of the vessels. Anxious to know how long this circulation would be continued, but fully expecting to see it cease every moment, myself and a friend, John Coppin, Esq., of Lincoln's Inn, watched it for upwards of an hour, at the end of which time the blood still flowed onwards in many of the vessels, with scarcely abated vigour, though in others, often larger ones, the motion had altogether ceased. The mutilated portion of the tongue was then placed in water, in which it remained during the whole of the night; the next morning it was again examined, when it was found that a tolerably active circulation still existed in several of the smaller vessels. After this observation, the further examination of the fragment was abandoned. The almost immediate cessation of the circulation which occurred in some of the larger vessels, admits of explanation in the following way:—In some vessels, the blood globules were seen escaping from their open extremities; this effusion of the globules frequently continued for two or three minutes, until the entire contents of such vessels became poured out, when, of course, the circulation within them ceased, the circulating fluid being expended: in other capillaries

the current was sure to stop long before their contents had been exhausted, in which case it was usually to be remarked that some of the blood corpuscles contained in the vessels had collected around their orifices, thus producing an impediment to the further maintenance of the current. The foregoing observation is one of much interest and importance, for it seems to prove that the capillary circulation is in a great measure independent of vital influences, and that its persistence is mainly due to physical agencies." pp. 72-3.

The following hints respecting the various modes in which milk is liable to be adulterated, and the means by which this species of fraud may be detected by chemical and microscopical examination, may—although of a plain and simple kind—be practically useful to many of our readers.

"The more usual substances employed for the purpose of adulteration are water, flour or starch, chalk, the brains of sheep; of these, water is the one most frequently had recourse to, and which is the most difficult to detect. The effect of water in altering the specific gravity of milk has already been referred to; and it has been shewn that the result of its addition to milk, a portion of the cream of which has been abstracted, is to restore the specific gravity which usually belongs to it. Donné has shewn that, however much the gravity of milk may vary, that the density of the serum of the milk is almost constant. This fact is interesting and important, for by a knowledge of it the deterioration of milk by its admixture with water, or with some other substance of the same density with it, may be ascertained. The serum is constantly heavier than water: adulteration with it would then cause the serum to exhibit a less specific gravity than that which should properly characterize it; the conclusion to be deduced from this circumstance being that the milk has been deteriorated most probably by the addition of water. The adulterations by flour and sheep's brain are readily detected by means of the microscope. The fraud by the former may be recognized by the peculiar form of the flour granule, as well as by the action of iodine upon them; and that by the latter may be distinguished by the detection, in the fluid, of more or less of cerebral structure, and especially of the nervous tubuli. The chalk in the milk is readily revealed by its effervescence with hydrochloric acid, as well as by its weight, which causes it to subside at the bottom of the vessel containing the milk." p. 176.

We strongly recommend the careful study of Mr. Hassall's treatise to all of

our readers who are able to devote any portion of their time to the cultivation of anatomy and physiology. A knowledge of the microscopic characters of the various constituents of the body in health and disease, is now becoming absolutely essential to every scientific medical man. Many years must doubtless elapse before the accumulated results of accurate and corroborative examination shall have placed the microscope upon its proper footing as an aid to diagnosis and prognosis, and as a means of tracing out with absolute certainty many of the most important physiological and pathological operations of which the human body is the seat; but still the work before us contains abundant evidence of the importance of the information already obtained from microscopical research, and it fully proves how vast an aid it will afford to the physician's means of investigation and action, so soon as an enlarged experience has removed from the science those errors with which unpractised observation and hasty generalization obscured it at its outset.

Proceedings of Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

June 20.

J. M. ARNOTT, Esq., F.R.S., PRESIDENT.

Fatal Case of Dysphagia, produced by a Polypous Growth in the Oesophagus.
By R. ARROWSMITH, M.D., Senior Physician to the Coventry and Warwickshire Hospital.

(Communicated by RICHARD PARTRIDGE, Esq., F.R.S., &c.)

THE patient, a ribbon-weaver, aged forty-eight, not previously unhealthy, came under the author's observation at the Hospital, in March last, having much difficulty of swallowing, with frequent, and, at times, severe cough, (always excited by attempts to swallow, but occurring independently of them;) copious frothy expectoration; fever, but no dyspnoea. The dysphagia gradually increased until deglutition became nearly impossible. Attempts were made to pass a tube into the oesophagus, but without success, and they occasioned at the time so much spasm of the glottis, as to endanger life. It occurred to the author, that if tracheotomy were performed, respiration might be carried on

through a tube left in the trachea, while more persevering attempts were made to pass instruments into the oesophagus. This operation was therefore performed, and a tube left in the trachea. After this the attempts to pass a tube proved equally unavailing, though the power of swallowing was improved for a few days. The dysphagia, however, shortly increased, and death ensued on the 14th of May, purely from inanition, about fourteen weeks from the apparent commencement of the disease. On examination after death, a polypous growth was discovered at the commencement of the oesophagus immediately behind the glottis; it was rather larger than a walnut, and attached by a short fibrous base, commencing about half an inch from the posterior commissure of the glottis, and extending for the same distance in a straight line in the axis of the oesophagus. The tumor formed, on the one hand, a mechanical obstacle to the perviousness of the oesophagus, and on the other, by passing under the epiglottis during attempts to swallow, prevented the closure of the glottis, and thus allowed fluids to pass down the trachea. The author, in conclusion, refers to various writers who have related cases of polypus in the oesophagus, but remarks that the one now recorded differs from any he has seen referred to, in the dysphagia being complicated with, and greatly increased by, the tendency of food to pass into the glottis.

A Case in which a Large Pouch was formed in the Oesophagus, in connection with Contraction of the Canal. By W. C. WORTHINGTON, Esq., F.R.C.S., Senior Surgeon to the Lowestoffe Infirmary, &c.

The author commences by observing that this lesion has been noticed by Sandifort, Meckel, Copland, and Rokitanaky, and refers more particularly to two cases described by Mr. Ludlow, of Bristol, and Sir Charles Bell. The case now related was that of a gentleman aged sixty-nine, of robust constitution, who experienced slight dysphagia for three years before his death. In January, 1846, deglutition became more impeded, accompanied with emaciation. In July the author was consulted, when there was great difficulty in swallowing, especially solids, and the passage of any food by the oesophagus was attended with a gulping noise. After consultation with Mr. Croese, of Norwich, attempts were made to pass bougies, but they proved abortive. From this time the patient gradually lost flesh, though he continued to take food, and it was often observed that a portion appeared to be swallowed, and for a time retained, but was shortly returned by regurgitation, little changed. For some weeks before death the

patient was sustained solely by nutritious enemata. On examination after death a pouch, was found behind the oesophagus, opposite the cricoid cartilage, hanging down between the trachea and oesophagus, three inches and a half long, and two inches and a half in circumference. Immediately behind the cricoid cartilage, and on a level with the commencement of the pouch, there existed a stricture formed by a transverse fold of mucous membrane, admitting only a large-sized urethral bougie; the oesophagus below was contracted, but the mucous surface healthy. The author concludes with some remarks on the diagnosis of these cases during life, and the best mode of treating them.

Dr. COLEY stated that he had met with a case somewhat analogous to the first case—to that detailed by Mr. Worthington. The patient was a medical man, who suffered from the symptoms of dysphagia for sixteen years. He consulted the late Mr. Cline, by whom the existence of a preternatural pouch in the oesophagus was discovered, but who overlooked the principal cause of disease—a stricture of the upper part of the oesophagus. The patient was under Dr. Coley's care only during the last three months of his life. Whalebone bougies, of a peculiar construction, similar in form to those used by Sir Charles Bell, were employed, but appeared to produce considerable irritation. The patient died from inanition and excessive thirst, he being totally unable to swallow liquids even. There was one symptom which was present in this case, which has not been mentioned by writers—excessive congestion of the velum pendulum palati, the tonsils, and, indeed, of the whole throat. At the post-mortem examination, there was found a pouch three inches long, and one in diameter, at the lower part of the pharynx, and a stricture at the upper part of the oesophagus, in an advanced state of carcinoma. The stricture, Dr. Coley thought, was the primary disease; the pouch of ulterior formation, the result of a process similar to that which takes place in the bladder, by the separation of its fibres, from severe and long-existing stricture in the urethra. A case of stricture of the oesophagus was published in one of the medical journals many years since, which was cured by mercury; and he (Dr. Coley) believed that a similar result would follow the exhibition of mercury and iodine, in the treatment of incipient stricture of the oesophagus, providing it were not dependent on carcinoma. He thought there was some analogy between these cases and the stricture in the lower part of the intestinal canal. Desault published the particulars of stricture in the lower bowel, cured by the internal use of mercury. The disease was supposed to be of syphilitic origin, but of that there was not

any positive proof. He (Dr. Coley) had at that time under his care a case of stricture of the rectum, with copious offensive discharge, which was getting well under the use of mercury; and in that instance, the disease was decidedly not syphilitic. He thought this plan of treatment should be had recourse to in all cases, before employing local remedies, the use of which he deprecated, as likely to cause great suffering and irritation, such as marked their application in the case he (Dr. Coley) had detailed.

Mr. ARNOTT remarked that the late Dr. Cline had the reputation of being one of the ablest surgeons this country had ever produced. Dr. Coley had stated that Mr. Cline had detected the existence of the pouch in the œsophagus, but not that of the stricture. He (Mr. Arnott) wished to know how long a time elapsed between Mr. Cline's attendance on the case, and that of Dr. Coley, and also how Mr. Cline has ascertained the existence of the œsophageal pouch?

Dr. COLEY replied, that the patient was seen by Mr. Cline about sixteen years before his death, before the more distressing symptoms of stricture had occurred. The only symptoms of the disease were, regurgitation of fluids, and difficulty of swallowing. The existence of the pouch was recognised by the bougie.

On the State of the Nervous System in Paralyzed Limbs. By R. B. TODD, M.D.

In this paper Dr. Todd demurs to the views of Dr. M. Hall, which ascribe an increased irritability to the muscles of paralysed limbs, where the lesion is in the brain, and make a distinction between spinal and central palsy in the loss of irritability in the paralysed muscles in the former case, and its augmentation in the latter. Dr. Todd advances a series of trials, on cases of hemiplegic paralysis, by means of galvanism, in the great majority of which the palsied muscles respond less to the galvanic stimulus than the healthy muscles; while in others, again, they are equally excitable with the muscles of the sound limb. The author adduces proofs to show that the difference in the excitability of the muscles, in cases of paralysis, is due to the different state of the nervous force in the nerves of the palsied limbs: in one class of cases it is in a minus condition, in the other it is in a plus condition, and in a third it is unaffected by the cerebral lesion. The author further points out, that, in truth, the muscular irritability has nothing to do with the phenomena in question; that that power is always in direct proportion to the nutritive condition of the muscles; and that the effects of galvanism, when propagated through the nerves, is not a true test of the state of the irritability of the

muscles, but rather of the excitability of the nerves themselves. Dr. Todd offers a new explanation of the tendency of strychnine to affect paralysed limbs first. According to this view, the strychnine accumulating in the blood is attracted in greatest quantity to the side of the brain on which the lesion exists, and excites irritation there, which, according to the usual law of cerebral influence, is propagated to the opposite side of the body, or to the paralysed muscles.

Case of Popliteal Aneurism. By W. H. Judd, F.R.C.S.E. Surgeon in Ordinary to His Royal Highness Prince Albert, Surgeon-major Scots Fusilier Guards, &c. (Communicated by Dr. Webster.)

Corporal D—, aged thirty-two, was an agricultural labourer in 1827, when he suffered from a severe fracture of the right thigh, and the bone was again broken before the cure was complete. He came under the author's care in October, 1846, for a pulsating tumor, about the size of an egg, in the right popliteal space. This could be emptied, and the pulsation in it was arrested by pressure on the femoral artery; in short, it was clearly an aneurism. His health was good. He was bled twice to sixteen ounces, and purged; but the symptoms remaining unrelieved, it was decided to try the effect of pressure, with which view the Italian clamp was employed. This was worn irregularly, in consequence of the patient not being very tractable, for four days; and on the fifth, although forbidden to rise from the horizontal posture, he removed the clamp, and got up, and soon felt something give way, and a hot sensation extending down his calf. This was followed by swelling and pain in the leg, together with faintness and pallor. After a consultation with Messrs. Keate and Guthrie, the author determined on placing a ligature round the femoral artery in the usual position. The operation was forthwith performed, (Nov. 1st,) and followed by relief to the patient's suffering. On the third day, the wound was nearly healed, except where the ligature hung out; but the pulse was very rapid, and the temperature of the limb low. The calf also was blue, and the foot cedematous. On the fourth day, a blush appeared in the ham, and gangrene speedily supervened. On the eighth day, an incision was made through the slough into the aneurism, and putrid serum flowed out. Tonic treatment and support were continued. On the twelfth day, symptoms of trismus made their appearance; and on the fourteenth, the tetanic spasm had extended to the frame generally, when death put an end to his sufferings. On examination of the limb, the false aneurism was found to occupy the whole calf, and was lined by a dark-red and inflamed membrane. The femoral artery was plugged above and

below the ligature. The popliteal artery entered the upper part of the true aneurism, and projected about two lines within the sac, above and below, where it appeared like a tube broken irregularly across. The author concludes by some observations on the cause of mortification and tetanus in this case, and by expressing his opinion that the injury received in 1827 may have laid the foundation of the disease which ultimately proved fatal to his patient.

On a Peculiar Injury of the Upper End of the Humerus, entering into the Composition of the Shoulder-joint, observed in six cases; with a Description of the Appearances discovered some years afterwards, on the death of one of the Sufferers. By G. J. GUTHRIE. [Communicated by the PRESIDENT.]

THE author commences by drawing attention to a clinical lecture delivered by him at the Westminster Hospital, in 1833, and subsequently published; and to a second, which he delivered in 1837; wherein he made some remarks on cases of an undescribed injury of the shoulder-joint. An opportunity having recently occurred, of verifying the diagnosis by examination after death, in the sixth case, he takes the opportunity of bringing the subject before the public, in consequence of the interest which naturally attaches to such cases, but especially because Mr. Smith, of Dublin, has expressed his belief that the injury in question was similar to one he had the opportunity of examining. After giving the report of Mr. Smith's case, from which it appears that "the greater tuberosity, together with a very small portion of the outer part of the head of the bone, had been completely separated from the shaft of the humerus," the author proceeds to describe the particulars of his sixth case. The subject of it was forty years of age, and his recovery was tedious; he, however, regained sufficient use of the arm for all useful purposes of his trade, except when he attempted to work above his head. In November last the man died, and the humerus was removed for examination. The opinion expressed respecting the nature of the injury, when under treatment, was, that there was a longitudinal split of the humerus, by which the small tuberosity was separated from the head of the bone, the anatomical neck of which was broken. This diagnosis proved essentially correct; but, in addition to the above injury, a second split appeared to have extended downwards, partly separating the greater tuberosity, and extending underneath, towards the shaft of the bone. The bicipital tendon was probably torn through at the time of the accident, as the groove was partially blocked by new ossific deposit.

The author concludes by referring to some clinical remarks, bearing on the point, by Mr. Hancock, and by repeating his persuasion that Mr. Smith was mistaken in supposing that his (the author's) cases were similar to those which he (Mr. Smith) had described.

An Account of the Structure of a Naevus.

By JOHN BINKERT, F.R.C.S., Demonstrator of Anatomy at Guy's Hospital.

[Communicated by T. B. CURLING, Esq.]

THE structure described by the author was a soft, bluish naevus, which was removed from the back of the hand of a young man, and consisted of areolar tissue, epithelium, with capillary and larger vessels. The mass was divisible into lobes, each possessing a distinct fibrous capsule. These lobes admitted of inflation, when isolated and encircled with a ligature; a subsequent section exhibited a reticular arrangement in their interior. The cells thus formed communicate with each other; but many of the lobes are isolated and distinct. The septa are composed of delicate fibrous tissue, covered by a tessellated epithelium; a basement membrane and yellow fibrous element are also present at various parts. The vessels (which were not injected) could not be traced into the septa, nor did they appear to open into the cells. Vessels, however, were discovered, passing from the corium to the septa, upon which they were lost. Interspaces, or reservoirs, between the corium and lobes (communicating with each) have veins opening into them, and each lobe appears to possess two or three small arteries, which constitute its independent supply. The author remarks that these tumors are not exclusively entitled to the appellation of "vascular or blood-vessel tumors," and he regards them as more closely resembling the corpora cavernosa than any other tissue, and considers that they ought to be classed with the fibrous tissues, resembling them probably in their development and mode of nutrition. The author concludes with some practical remarks, and an enumeration of the different modes of treatment which should be adopted for the cure of the disease.

On the Source of Hemorrhage in Partial Separation of the Placenta. By W. D. CROWNE, M.D.

THE paper defended the doctrine, that in such cases the hemorrhage is essentially and mainly from the veins of the uterus, which become exposed at that part whence the placenta is separated. Several inferences are adduced from the influence of contraction and non-contraction of the uterus—from the relative effects of hemorrhage on the mother and on the fetus—from the

character of the blood effused, and from analogical considerations in relation to the pulmonary circulation in extra-uterine life, and the placental circulation in utero. The paper adduces also inferences drawn from the anatomical structures, and the functions of the parts concerned; and, also, from the hemorrhagic phenomena connected with inversion utero, together with the diagnosis founded on these phenomena; and it cites, with regard to the source of hemorrhage, as demonstrated to the observation, the experience afforded by Caesarean operations.

PROCEEDINGS OF THE
PHYSIOLOGICAL SECTION OF THE
BRITISH ASSOCIATION AT
OXFORD.

The Physiological Section of the British Association for the Advancement of Science was accommodated during the meeting at Oxford in the Writing School. The committee consisted of the following gentlemen:—

SACRISON E.—*Physiology.*
Writing School.

President.—Professor Ogle, M.D. F.R.S.
Vice - Presidents.—Professor Owen, F.R.S.; J. E. Gray, Esq. F.R.S.; G. Newport, Esq. F.R.S.; John Simon, Esq. F.R.S.

Secretaries.—Dr. Thomas K. Chambers; W. P. Ormerod, Esq.

Committee.—Professor Allman; Dr. Milne Edwards; Sir John Richardson, M.D. F.R.S.; Richard Carmichael, Esq. F.R.S.; Dr. John Forbes, F.R.S.; Dr. Greshams, Rotterdam; Dr. Acland, F.R.S.; Dr. Addison, F.R.S.; Dr. Ayres; W. B. Carpenter, M.D.; Dr. R. Latham; Henry Lee, Esq.; C. L. Parker, Esq.; Th. Allen, Esq.; Dr. Fowler; Dr. Boisragon; Dr. Hart, Dublin; W. Bowman, Esq. F.R.S.; Prof. Partridge, Esq. F.R.S.

The following papers and communications were read:—

1. "Examination of the Corpuscles of the Blood of the *Amphioxus lanceolatus*," by T. H. Huxley, Esq. Surgeon to H.M. Ship *Rattlesnake*; with a Prefatory Notice by T. Wharton Jones, Esq. F.R.S.

A specimen of this animal was examined in September 1846; and two incisions having been made in the skin and through the tail, a small portion of blood was collected.

The blood was thin, with a slight rusty tinge, and under the microscope presented the following appearance:—

In both specimens a number of large, irregular, pale, greenish granule cells, rather

more than $\frac{1}{800}$ inch in diameter, containing a few strongly refracting granules, were visible; besides these, there were other cells, with more or fewer granules, so that there was a complete gradation from those which were full of coarse granules, to those which had quite a fine texture, without any granules at all. In one specimen only were two roundish, or slightly oval, corpuscles seen, rather more than $\frac{1}{800}$ inch in diameter, with a nucleus occupying three-fifths of that extent. This nucleus was greenish-looking, and refracted light strongly, while the cell wall was of a pale reddish colour, and exceedingly delicate; so much so, that it seemed more like a reddish halo round the nucleus than a distinct structure. Altogether, with the exception of the last-mentioned corpuscle, the blood of the *amphioxus* had a most remarkable resemblance to that of an invertebrate animal, and that in every particular.

2. "On Scarlatina Increased and Aggravated by Want of Ventilation." By the Rev. Thomas Rankin, Huggate Rectory.

3. "Brief Remarks upon the Vital Principle." By James Billet, Consulting Surgeon to the Taunton and Somerset Hospital, &c.

4. "Remarks on Cases of Foals of Ponies resembling Stags, considered doubtful by himself." By Dr. Fowler.

5. "On the Analogy of the Sclerogenous Tissue of Plants with the Bones of Animals." By P. B. Ayres, M.D.

The author described the appearances presented by thin sections of the stony endocarps of the apricot, peach, and cherry, and the bony testa of some seeds, especially in the cellular tissue. This latter structure was found to consist of cells of regular and irregular forms of variable size, each cell being filled with sclerogen, except in its centre, where a cavity was found to exist, from which simple or branched pores radiated of the direction of the parietes of the cell. With a high power and strong light several concentric circles were seen situated between the cell-wall and the central cavity, indicating that the sclerogen was deposited in concentric layers: these circles were also intersected by the radiating pores just described. In some specimens, as in the cherry-stone, the pores were simple, radiating in straight lines from the central cavity, whilst in the apricot, cocoa-nut, and in the testa of the seed of a certain euphorbiaceous plant, they were ramified. The author compared these with the lacunae placed round the Haversian canals, remarking on the absence of cell-walls in the latter, and the probability of their absence depending on the high organization and rapid development of animal as compared with

vegetable tissues. In conclusion, the author alluded to the assistance which might be derived from the examination of the sclerogenous tissue of plants in examining the development of bone.

6. Dr. Carpenter made some remarks on the "Co-relation of the Vital and Physical Forces," and also made further observations on the "Functions of the Nervous Centres."

7. "On Hydropathy as a Means of Preserving Health, and as a principal Remedy in Disease." By E. Humpage, Esq. Bristol.

8. "On the Powers, or Causes, co-operating in the phenomena of Human Life." By Dr. Addison, of Malvern.

9. "On Baths and Wash-houses, illustrated by a model and drawings of those recently established in London." By W. Cotton, Esq. F.R.S.

10. Dr. Gorini, Professor of Mathematics at Lodi, exhibited a series of preparations of the human body which had been dried by some peculiar mode. The parts retained the form and appearance of living parts to a great degree, were hard, consisted of an homogeneous brown substance, and were quite free from all putrefaction. He mentioned that he had also discovered a mode of preserving articles of food.

11. Dr. Fowler read a paper on "A Physiological Explanation of some Peculiarities of the Blind, Deaf, Dumb, and Cretins," considering that the substitute for a defective sense was not increased acuteness in the senses, which remained in a normal state, but a more accurate adjustment by the attention necessarily directed to them. He also considered that the cases of associated perceptions (as in Cheselden's case of blindness) were explained by supposing that the impression made in the specific nerve of any one sense were re-transmitted to the adjusting nerves and muscles of other organs of sense.

12. Dr. Groschhaus, of Rotterdam, read a paper "On the Supposed Antagonism of Consumption and Ague."

13. Dr. Acland exhibited a series of microscopic preparations of injected portions of the lung, liver, kidney, and muscular fibre, sent by Professor Hyrtl, of Vienna.

14. "On some points in the Anatomy of the Eye, chiefly with reference to its Power of Adjustment," by W. Bowman, Esq., F.R.S.

In this paper the author describes, under the name of *anterior elastic lamina*, a new membrane in the cornea, situated under the conjunctival epithelium, and answering to the basement membrane in other parts of the integumental and mucous membranes. He details the mode in which it is bound down to the lamellated tissue, and how it terminates at the margin of the sclerotics.

He also mentions the existence of a system of minute tubes arranged in a remarkable manner in the substance of the cancelled cornea tubes, which he considers to form channels of nutrition for this otherwise non-vascular structure.

He then goes on to describe the mode in which the *posterior elastic lamina*, or the *membrane of Demours*, behaves at the border of the cornea, going partly to form the *pillars of the iris*, partly to give origin to the ciliary muscle, partly becoming fixed to the sclerotics, and forming the principal portion of the ciliary ligament. He then speaks of the ciliary muscle, its origin, course, and termination; and enforces his view of its muscularity by a variety of arguments derived from its structure, connexions, supply of nerves, and comparative anatomy. Then, passing to the connexions of the lens, he minutely investigates the manner in which it is hung in place, and concludes by explaining how the ciliary muscle may probably act as an adjusting power within the globe, to adapt the eye to distinct vision at varying distances.

In conclusion, Mr. Bowman describes the lines on the surfaces of the adult human lens, from which the fibres pass, to be much more complicated than hitherto supposed; while he shows, at the same time, that in the human foetus they are nearly as simple as in the ordinary mammalian lens: and he thence illustrates the appearances of cataracts.

15. "On the Cure of Diseases by Motion," by Augustus Georgii, Professor of Anatomy, Stockholm."

16. "On the Physiological Condition of the Blood in Erysipelas, and probably in some other cases of Inflammation," by John Goodman, M.R.C.S.E., Manchester."

The author remarked on the peculiar contrast and dissimilarity between the quantities of serum and coagulum in blood, taken from individuals labouring under erysipelas, the coagulum, after standing twenty four hours, preponderating to a considerable amount: the proportions being about serum, 6½ ounces; coagulum, 22½ ounces. By repeated bleedings, to a smaller amount, as well as by diluents and other means, the two constituents have been so reduced, or nearly so, to an equality of volume, when the patient has as certainly recovered. These cases, where this proportional composition of the blood existed, the author considered as best treated by the addition of aqueous fluid to the blood by drinking copiously of water.

17. "Dr. Fisher, on a Disease occurring in the Prison at Ely."

Medical Trials and Inquests.**CASE OF POISONING BY PRUSSIC ACID—
RETENTION OF THE POWER OF VOLITION
AND LOCOMOTION FOR FIVE MINUTES,
AFTER A LARGE DOSE.**

A CASE of poisoning with hydrocyanic acid, attended by circumstances which give peculiar interest to it in a medico-legal point of view, has recently occurred in Worcester. It will be recollected that an inquiry into a case of poisoning by the same agent, in which there was the manifestation both of consciousness and volition after swallowing the poison, took place some time ago at Bristol. In this case, which was reported at the time by Mr. Godfrey, (*Provincial Medical and Surgical Journal*, 1844, p. 398,) the individual, a man 44 years of age, after taking half an ounce of the acid, had walked ten paces to the head of the stairs, descended the stairs, seventeen in number, and then proceeded rather quickly to a druggist's shop, forty-five paces distant, where he had procured the acid, entering the shop in his usual slow and easy manner, and asking for "more of that prussic acid," before he became evidently affected by the poison which he had swallowed. In this instance, at least five minutes must have elapsed from the time of swallowing the poison before death took place, but there was no evidence to show the actual strength of the acid taken.

Another somewhat similar case is reported by Mr. Nunneley, of Leeds, (*Provincial Journal*, 1845, p. 461), but in this also neither the strength of the acid, nor the quantity actually swallowed, could be accurately ascertained. Both cases, were, however, farther remarkable, in that there was neither convulsions nor shriek.

The case to which we are now referring will be found to differ from the foregoing, in that both the dose and the strength of the acid made use of, are known. We subjoin the more important part of the evidence given on the inquest:—

Mr. John Stringer, druggist, of St. Swithin Street, deposed that the deceased, Mr. Benjamin Shepherd, surgeon, occasionally came to his shop to write a prescription, but he never made any purchases until yesterday. About one o'clock yesterday, (Tuesday, June 8th,) he came to witness's shop with his sister, Mrs. Hill, and after the usual salutation, he said, "Just put me up two drachms of Scheele's prussic acid." Witness procured what was required, and handed it to the deceased in a bottle regularly labelled. Mr. Redgrave, of New Street, came in just at that time, and complained of a pain in his bowels. Witness, in joke, observed to him, "You had better take a dose of this:"

meaning the prussic acid. Mr. Shepherd thereupon observed, "That will cure you directly; you can't have anything better." Some further conversation took place, and shortly afterwards Mr. Shepherd left the shop, and returned again in a few minutes with Mrs. Hill. He then asked for an ounce of carbonate of soda, and placed a sovereign on the counter to pay for it. Witness declined at first to receive payment for so trifling an article, but as the deceased insisted on paying for it, witness gave him the change. The deceased then asked if any one was in the back room. Witness replied "No," and the deceased then walked into the room, saying to witness, "I want a word with you." Witness followed him into the room within two minutes, (being detained by a customer in the shop,) and found him sitting on the sofa. On witness going into the room he saw no alteration in him, but observed on the table the bottle in which the prussic acid had been placed, empty. [The bottle was produced: it was quite empty.] I said, "Good God! Shepherd, you have not been taking that!" Deceased replied smiling, "No, no; it's all right; take no notice. Give me your hand, old fellow." Witness went up to him, and the deceased added, "God bless you. It's all right; take no notice." Witness immediately took up his hat and went to fetch Mr. Griffiths, the nearest surgeon. Mr. Griffiths was from home, but came shortly afterwards, and witness proceeded to the top of Broad Street, where he met Mr. Pierpoint, who ran back with him, and found deceased on the floor, but not dead. Mr. Pierpoint and witness tried to administer ammonia, as an antidote to the prussic acid, and an attempt was made to produce vomiting. This did not succeed, and the stomach-pump was sent for, but on its arrival the deceased had just died. The quantity of Scheele's prussic acid in the bottle was about 120 drops, which contained about six drops of the real acid. This would kill a man instantaneously. Deceased had drunk some water in the shop just before he took the prussic acid. This would prevent the acid acting so rapidly.

Mrs. Stringer, wife of the preceding witness, deposed that she was below stairs when she heard some one go into the parlour over her head. She immediately went up stairs, (about twelve steps,) and looking through the glass door, saw the deceased on the sofa in the act of drinking something. She then went down stairs, and in about ten minutes she heard footsteps of a person passing quickly. She then went up stairs again and found the deceased on the floor, Mr. Stringer having left the room to fetch a surgeon. Thinking he was in a fit, she placed a sofa-pillow under his head and unfastened his

neck-cloth, and soon after Mr. Stringer returned with Mr. Pierpoint.

Mrs. Hill, sister of the deceased, deposed that her brother asked her on Tuesday if she was going into town, as he would go with her. Witness accordingly went with him to Mr. Smith's, in Sidbury, from whence they proceeded along Friar Street, and New Street, to Mr. Stringer's. Her brother had lately appeared much bewildered, as he did on Tuesday morning, and she had frequently to ask him questions two or three times before he appeared to understand her. She did not know what could have led to this, until last Sunday, when he read to her and her father an anonymous letter which he had received, observing that that letter was enough to disturb him. Her brother complained on Sunday of his head being hot, and had appeared incoherent in his manner for several days. He said that the people were all making signs at him; this impression appeared to be very strong on his mind. On Sunday and Monday he was continually making signs by moving his arms, placing them across his breast, &c.; witness endeavoured to dissuade him from such actions, but he persisted in them. The witness's evidence went further to corroborate what has already been stated in Mr. Stringer's evidence. She added, that on her brother leaving Mr. Stringer's for the first time, he wished her to go on home while he returned to Mr. Stringer's for something else which he wanted; but witness having some misgivings, returned with him, and then he bought the carbonate of soda, and went into Mr. Stringer's parlour. Witness entreated Mr. Stringer to follow him, as she was afraid there was something the matter with him. Mr. Stringer returned in a minute, exclaiming, "He has taken it." Witness rushed into the parlour and met her brother, who advanced towards her about a yard into the room, and said, "Good by, Mary; God bless you! I have taken it." The witness's recollection here became indistinct from excitement. She said that her brother at first complained of being sick, but almost immediately he fell upon the floor. He did not eject anything from his stomach. She fully believed her unfortunate brother to have been much bewildered, and not in his right senses, when he was in Mr. Stringer's shop. He had previously complained of want of sleep, and took laudanum on Sunday for the purpose of procuring sleep. He had taken it on previous occasions for the same purpose, and to prevent coughing, he having some twelve months ago ruptured a blood-vessel in the lungs. Her brother had lately carried about him a large knife from his surgical instrument case, saying that "it was quite necessary in these times." He appeared afraid to go out alone.

M. Pierpoint, Esq. Surgeon, stated that he was called in by Mr. Stringer to the deceased about one o'clock yesterday morning. He found him lying on his back on the floor in Mr. Stringer's parlour, his head lying on a sofa-pillow, and apparently dead. Mrs. Hill and Mrs. Stringer were present, and having raised the deceased, witness mixed some ammonia and water in a wine-glass, and attempted to pour it down his throat, but he did not swallow any portion of it, and none reached the stomach. Witness also applied a feather to the inside of the throat, with the object of producing vomiting, but without effect. He then sent for a stomach-pump, and in the meantime the deceased heaved a sigh or two and was dead. There was no pulsation at the wrist or heart."

The appearances observed on a *post-mortem* examination were here detailed. The following are the notes taken by Mr. Pierpoint, at the time, to whom we are indebted for them:—

Countenance (particularly the lips,) livid; neck, shoulders, and all the posterior part of the trunk, purple. On dividing the integuments, dark blood flowed freely; the blood of the body universally dark and quite fluid; the lungs loaded with dark blood, which had to a considerable extent gravitated to their posterior portion. The right auricle and right ventricle of the heart, and vena cava, full of dark fluid blood; the left ventricle firmly contracted and quite empty. *Five out of six gentlemen did not perceive any odour of prussic acid upon approaching the body, either before or after it was opened.* All the abdominal viscera healthy; urinary bladder half full of urine, which exhaled no unusual odour; brain natural, but full of fluid blood. The stomach contained about one ounce of raspberry-coloured looking fluid, and had a strong smell of almonds; the stomach itself, particularly at its cardiac extremity, had a very vascular appearance, and in some of the patches oozing of blood had evidently taken place. Some of the patches had also a brownish appearance. It is obvious from the foregoing account that the time which elapsed from the swallowing of the acid to the fatal termination must have been some minutes. There was both consciousness and volition manifested, according to the evidence of Mr. Stringer, about two minutes, and according to that of his sister, for some time longer, after the poison had been taken. There was no evidence of the occurrence of either convulsions or shriek. As the quantity of the acid measured out to the deceased was known, and as he was seen to drink it out of the bottle, the bottle being afterwards found quite empty, it became very desirable that the strength of the acid should be accurately ascertained. Mr. Stringer was

therefore asked for a similar quantity of the acid taken from the same bottle. This was put up in a sealed phial, and sent to Mr. Alfred Taylor, of Guy's Hospital, with a request that he would be good enough to submit it to examination. To Mr. Taylor's kind compliance with this request we are indebted for the following notice:—

The phial contained 105 drops, weighing 98 grains. The whole of this was precipitated by a solution of nitrate of silver in excess. The precipitate (cyanide of silver,) was thrown on a filter, and washed until the washings were no longer affected by chloride of sodium. It was then thoroughly dried in vapour bath, and weighed in a balanced filter.

The quantity of dry cyanide of silver obtained was 9.3 grains; and as 100 of cyanide are equal to 20.14 of anhydrous acid, the quantity of *anhydrous* prussic acid present in the 98 grains of the acid forwarded, was equal to 1.87 grains.

- Ag.Cy. H.Cy. Ag.Cy. H.Cy.
100 : 20.14 : 9.3 : 1.87

The acid, therefore, had a strength of rather more than 1.9 per cent. or nearly 2 per cent. I presume, therefore, it was intended to be the acid of the London Pharmacopœia.

The quantity of acid taken, according to Mr. Stringer's evidence, may possibly have been somewhat more.

Traces of the acid were found by Mr. Orwin in the fluid taken from the stomach, by whom it was submitted to examination.

This case, therefore, the leading features of which have here been detailed, adds another instance to those already on record, in which life was not immediately extinguished by a fatal dose of the poison,—in which certain acts implying consciousness and volition were performed, and in which death, as far as could be ascertained, was not preceded either by convulsions or the "shriek." It differs from former cases in this important particular, that the actual quantity taken, and the strength of the preparation, have been determined."—*Provincial Medical and Surgical Journal*.

Correspondence.

ON THE APPLICATION OF LIGATURES IN THE REMOVAL OF TUMORS.

SIR,—I have just read, in a clinical lecture by Mr. Caesar Hawkins, reported in your journal of the 23d ult., an account of an operation for the removal of a tumor from the lip in a case of aneurism by anastomosis; and, as the method of passing the ligature described by him appears rather complex, I beg to submit the following to your notice:—

Let a common curved needle, armed with a double ligature, be passed through the lip from *without* inwards on one side of the tumor, and then again brought through from *within* outwards on the other side of the tumor. Then let the needle be cut off, and one of the threads be divided between the punctures.

By this method of proceeding, the ligatures will be brought into precisely the same condition as after the operation described by Mr. Hawkins, with the advantages of being more quickly performed, and of avoiding the necessity for employing an eye-pointed needle, an instrument which, in the country, is not always at hand.

Should you think the above suggestion likely to be of service, perhaps you will oblige me by inserting it in your valuable journal.—I am, sir,

Your obedient servant,

A STUDENT.

London, July 16, 1847.

ON MERCURIAL SALIVATION.

SIR,—I see it stated in your number of the 9th inst., on the authority of the *Ann. de Soc. Méd. de Flandre*, that "mercurial salivation can only be produced in those persons who are provided with teeth." I am at a loss whether to receive this as an ascertained fact, or merely as an assertion that may be true. The case by Mons. Berard which the above authority adduces in support of it appears to me very equivocal:—"A woman having been submitted for some time to mercurial frictions, at length became salivated; but it was remarked that the increased flow of saliva was *only manifested in the neighbourhood of two stumps of teeth* with which her mouth was supplied." If the salivary secretion was at all increased by the exhibition of the mercurial, it would seem to me that the increase *could only manifest itself*, in the first place, *at the orifices of the salivary ducts*, and subsequently in other parts of the mouth, according to circumstances, among which, however, I should not think of ranking the presence of stumps of teeth. If it were asserted that the gum manifested the action of the mercury particularly in the neighbourhood of the stumps, it would be intelligible. However, referring again to the fact asserted rather than the illustration of it, allow me to ask you and, through you, your numerous readers, if it be ascertained that mercury can be made to produce its effects only on the mouths of persons possessed of teeth; and further, what distinction is to be made, in respect to this observation, between infants previous to the appearance of the teeth and old people who have not even one stump left?

The insertion of this communication in

the columns of the *MEDICAL GAZETTE* will much oblige

Your obedient servant,
J. B. M.

London, July 17, 1847.

Medical Intelligence.

ON THE REMUNERATION OF MEDICAL OFFICERS OF POOR LAW UNIONS—MEETING OF MEDICAL OFFICERS.

ON Tuesday, July 6th, a meeting of the medical officers of the several districts of the Poor-Law Union was held at Halifax, — Brook, Esq. in the chair, when the following resolutions were proposed, seconded, and carried unanimously :—

1. That in the opinion of this meeting, the administration of medical relief to the poor is of vast importance; moreover, it demands not only skill, but an amount of patience and forbearance, as well as a defiance of fatigue and personal danger, such as can alone be found as traits in the character of a conscientious medical practitioner.

2. That the medical attendant on the poor is necessarily brought into daily contact with diseases of the greatest virulence,—that he is compelled to treat them under the most depressing circumstances,—that he often falls a victim in the faithful discharge of his duty,—and, therefore, he needs the encouragement and support of every well-principled mind. That he has constantly to visit the abodes where poverty and squalor reign triumphant, and on him devolves the arduous and perilous duty of attempting, at all risks, to control the dissemination of contagious diseases of every type.

3. That in the opinion of this meeting the public services of medical men are neither properly understood nor duly appreciated, and the award made to them is on a scale wholly incommensurate with the amount and importance of the duties they have to perform. That the stipend they receive does not place them on an equality with an Inspector of Police, notwithstanding which, they are compelled not only to furnish medical advice and attendance, but to supply all necessary appliances and medicines. That the smallness of the stipends now awarded, makes it clear that the medical relief of the poor falls, not on the Board of Guardians, but, very unjustly, on the hard-worked medical officers.

4. That as one-half of the salaries of medical officers is now provided out of the Consolidated Fund, purposely that means may be available for affording more adequate remuneration, Boards of Guardians can have no excuse for withholding that just and liberal allowance which is preeminently due;

but, on the contrary, have, from this arrangement, a strong inducement to render the profession a worthy, and not unmerited, service.

5. That it is the opinion of this meeting that (although medical officers do not expect to be remunerated in a manner equivalent to their actual services, or in accordance with the charges they make to the poorest of private patients), their present salaries are so extremely inadequate, that they are justified in urging on the Board of Guardians a large addition, or a fixed sum of 7s. 6d. per case—renewable, in long-continued ailments, every three months.

6. That this meeting pledges itself to uphold, by every means in its power, the honour and dignity of the profession;—on all occasions to advance its best interests, and promote the welfare of every member, thus hoping to secure the approval and support of their brethren at large.

7. That the foregoing resolutions be respectfully submitted to the Board of Guardians at an early meeting, with a fervent hope that they will be pleased to grant them a patient consideration, and that they may be induced to set an example of duly appreciating the public services of their medical officers, whose lives are hourly jeopardised in the prosecution of their duty.

A vote of thanks was then passed to Mr. Brook for his able conduct in the chair, as also to Messrs. F. S. Garlick and Thos. Harrison, for their exertions in drawing the meeting together.

REPLY OF THE LORD LIEUTENANT TO THE PETITION OF THE IRISH MEDICAL PRACTITIONERS.

Dublin Castle, July 14, 1847.

SIR,—I am directed by the Lord Lieutenant to inform you, with reference to your letter of the 9th instant, that by the Act 10th Vic. ch. 22, the salaries of the medical officers appointed under the 9th Vic. ch. 6, are subject to such regulations as may be made by the Lords Commissioners of Her Majesty's Treasury, to whom therefore his Excellency has forwarded the memorial to which you refer.—I am, sir,

Your most obedient, humble servant,
W. REDINGTON.

W. R. Wilde, Esq.
15, Westland Row.

APOTHECARIES' HALL.

NAMES of gentlemen who passed their examination and received certificates to practise, 15th inst.—Henry Alfred Warburton, Websey, Bradford—James Braid, Manchester—Chappell May Empson, Crediton, Devon—James Lancashire, Sand, near Bury—Oliver Pemberton, Birmingham—Hugh Robert Rump, Wells, Norfolk.

OBITUARY.

On the 10th inst. at Primrose-hill, Coventry, Henry Ronalds, M.D. aged 59.

At Broadwater, Sussex, on the 10th ult., Charles Mayberry, Esq., surgeon, R.N. in the 57th year of his age.

On the 19th inst., in Craven Street, Dr. Tobin, R.N., surgeon of Her Majesty's Dockyard, Devonport.

Selections from Journals.

ACEPHALOCYSTS IN THE HEART.

A ROBUST woman, 37 years of age, who, some years previously, had received a severe blow over the region of the heart, but had never complained of any symptoms of an affection of the chest, was suddenly seized with a sense of pressure and distress in the chest, and died in about half an hour afterwards. On examining the body, the blood generally was found perfectly fluid, and without the slightest appearance of coagulation anywhere. The heart, which was of natural size, and externally quite healthy, presented, on that side of the ventricular septum facing the right ventricle, and close to the origin of the pulmonary artery, an irregular and somewhat ulcerated-looking crack or fissure, about three lines in length, the direction of which was about parallel with that of the long diameter of the heart. This aperture led into a cavity situated in, and occupying almost the whole of the substance of, the ventricular septum. The upper end of this cavity made a considerable projection into the right ventricle; its lower end projected slightly into the left ventricle. The cavity itself was about capable of containing a good-sized walnut; its interior was lined by a smooth, whitish, and somewhat turbid membrane, through which, however, the subjacent muscular fibres, uneven and disposed in bundles, could be discerned; the membrane could be separated quite easily from these muscular fibres. Nothing but blood was found in the cavity. In the sac of the left pleura, loosely attached to the pleural surface of the diaphragm, was found the bag of an acephalocyst, about equal in size to the cavity in the ventricular septum of the heart; its walls were thick and tough. —*Schmidt's Jahrbücher*, No. 1, 1847.

ON THE EMPLOYMENT OF COLD WATER IN CASES OF SEVERE BURNS.

BY DR. KÜSTEN.

A CASE of very extensive burning, treated most successfully by the prolonged application of cold water, has been recorded by Dr. Küsten, the particulars of which seem to indicate the great advantage which may probably be derived from this mode of treat-

ment in most cases of severe burns. Dr. Küsten was first led to set a high value on the use of cold water in such cases by observing the good effects which resulted from it, in the case of his own child, nine months old, which was severely scalded about the neck, chest, and abdomen, by the upsetting of a teakettle containing boiling water. The application of cold water was commenced immediately after the child's dress was removed: very abundant vesicative power had already taken place in the form of numerous large and small blisters. For six hours, without intermission, the application of cold wet cloths was continued: the cloths being replaced by others as quickly as they became warm. At the end of this time the smaller vesicles had quite disappeared, and the places occupied by the larger ones were indicated by more or less intensely reddened spots. The child meanwhile had fallen asleep, and it slept soundly the whole night (the accident having occurred about six o'clock in the evening). On the following morning the only trace of the burn consisted of a dry shrivelled appearance of the cuticle on one small spot; and this peeled off in a day or two.

The case, however, in which the beneficial effects of this mode of treatment were especially illustrated, occurred in a brandy distiller, who, in consequence of the bursting of the still, was extensively scalded over the body by the boiling and blazing spirit. The man's head, at the time of the accident, was fortunately covered by a thick cloth cap, and escaped injury; but the upper part of the body, being defended only by a shirt, suffered severely. When seen by Dr. Küsten, about an hour after the accident, the patient was almost unconscious: he lay moaning, and constantly ejaculating "Fire!" After washing off, by means of a watering-pot, the layers of scraped potatoes which had been spread over the burned surface, it was found that over the whole body, down to the lower part of the thighs, there was scarcely a spot which was not more or less injured. The slightest degree of injury was manifested by vesication; but over the neck, chest, arms, and abdomen, the skin in places was quite destroyed. Dr. Küsten immediately covered the entire burnt surface with linen; and for an hour this was kept constantly cold and wet by pouring cold water over it from a watering-pot. After pausing for five or six minutes, the application of cold water was renewed, and continued for another hour, at the end of which time the man had recovered from his state of partial unconsciousness. He was then left, with directions that the application of the cold water should be continued as before. When seen in about six hours afterwards, the patient was in a promising condition:

his face was slightly flushed; eyes open; pulse 100. He complains of a sense of general burning, which was relieved by drinking, and by the repeated application of cold water to the burned surface. This application was continued until the patient complained of being cold. On examining the injured part the following day, the places which were previously occupied by the vesications were indicated only by intense redness; the other part had much the same appearance as before: portions of the destroyed skin came off on removing the dressing. The injured parts were then dressed with cloths dipped in vinegar, and kept constantly wet by sprinkling cold water on them. The patient had some sleep during the night, and on the following day the reddened portions of skin had resumed almost their natural colour: commencing granulations were observed along the margins, and within the spaces of the surfaces, where the skin had been destroyed. The pulse was 90, the thirst less intense, and the tongue less dry than on the preceding day. For nine more days the same treatment was continued, and with the happiest results, for at the end of this time the wounds were almost healed.

In the treatment of such severe wounds by this mode, the dressing must, of course, be changed at least once in the twenty-four hours.

Dr. Küsten mentions one or two other instances, in which the healing of burns, of various degrees of severity, was effected most rapidly and satisfactorily by this continued application of cold water.—*Casper's Wochenschrift*, Mai 1, 1847.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, July 10.

BIRTHS.	DEATHS.	Av. of 5 Sum.
Males.... 618	Males.... 434	Males.... 479
Females.. 581	Females.. 448	Females.. 461
1199	882	940

DEATHS IN DIFFERENT DISTRICTS.

(84 in number;—*Registrars' Districts*, 120. Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	139
NORTH—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 366,308)	188
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	151
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 393,247)	172
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich .. (Pop. 479,469)	232
Total	882

CAUSES OF DEATH.

		Av. of 5 Sum.
ALL CAUSES	882	940
SPECIFIED CAUSES.....	880	935
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	215	226
Sporadic Diseases, viz.—		
2. Dropsy, Cancer, &c. of uncertain seat	102	103
3. Brain, Spinal Marrow, Nerves, and Senses	156	167
4. Lungs and other Organs of Respiration	195	226
5. Heart and Bloodvessels	21	25
6. Stomach, Liver, and other Organs of Digestion	91	94
7. Diseases of the Kidneys, &c.	6	8
8. Childbirth, Diseases of the Uterus, &c.	11	10
9. Rheumatism, Diseases of the Bones, Joints, &c.	7	7
10. Skin, Cellular Tissue, &c.	5	5
11. Old Age	50	60
12. Violence, Privation, Cold, and Intemperance	25	28

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	32	Convulsion	43
Measles	44	Bronchitis	26
Scarlatina	13	Pneumonia	36
Whooping-cough ..	18	Phthisis	114
Typhus	53	Dis. of Lungs, &c. ..	8
Dropsy	13	Teething	11
Sudden deaths ..	4	Dis. Stomach, &c. ..	7
Hydrocephalus ..	38	Dis. of Liver, &c. ..	20
Apoplexy	17	Childbirth	8
Paralysis	21	Dis. of Uterus, &c. ..	2

REMARKS.—The total number of deaths was 58 below the summer average. The deaths from small-pox, measles, and typhus fever, are considerably above the average of the season.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	29.82
" " Thermometer	63.5
Self-registering do. max. 106.4 min. 36.5	
" in the Thames water — 70.8 — 63.5	

a From 12 observations daily. b Sun.

RAIN, in inches, '04: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 4.5 above the mean of the month.

NOTICES TO CORRESPONDENTS.

We are obliged to Mr. Ormerod for the contribution with which he has favoured us.

We shall have great pleasure in inserting Dr. C. Elam's paper on the Pathology of Diabetes.

Communications have been received from the following gentlemen:—Dr. W. H. Madden, Torquay—Dr. E. H. Orpen, Birkenhead—Sir C. Scudamore—Mr. F. S. Garlick—"An Expectant."—Mr. J. Grantham.

Lectures.

LECTURES

ON THE

DISEASES OF INFANCY AND
CHILDHOOD,

Delivered at the Middlesex Hospital,

By CHARLES WEST, M.D.

Physician-Accoucheur to, and Lecturer on Midwifery at, the Middlesex Hospital, and Senior Physician to the Royal Infirmary for Children

LECTURE VII.

Simple inflammation of the brain—its differences from hydrocephalus—occasional extreme rapidity of its course—cases in illustration—morbid appearances—frequent connection with meningitis of the cord—extreme rarity as an idiopathic affection—treatment.

Inflammation of the brain, succeeding to disease of the ear—digression concerning otitis—its symptoms—distinctions between it and inflammation of the brain—treatment—chronic diarrhæa, with disease of the temporal bone—case.

Phlebitis of the sinuses of the dura mater—circumstances under which it occurs—it sometimes succeeds to large collections of pus in distant organs—cases in illustration.

GENTLEMEN.—We have been engaged at our last two meetings with the study of one form of inflammation of the brain in the young subject. We found hydrocephalus to be an affection almost exclusively confined to children whose previous health had been indifferent, who had shown some indications of phthisis, or in whose family phthisical disease existed. We observed its development to be gradual, its progress often tardy, and attended with irregular remissions; but its issue almost always fatal. The alterations of structure discovered after death were seen to be slight at the convexity of the brain, but very obvious at its base, where, in addition to the effects of inflammation, the membranes often present a peculiar granular appearance. The fluid contained in the ventricles of the brain is almost always transparent, and tubercle is discovered in some, often in many, of the viscera.

But we sometimes meet with cases in which inflammation of the brain has given rise to changes that contrast remarkably with those which true hydrocephalus produces. We find the cerebral membranes intensely injected, the effusion of lymph or

pus abundant, especially about the convex surface of the brain, where it sometimes forms a layer concealing the convolutions from view. Moreover, the fluid that occupies the cavity of the arachnoid, as well as that within the ventricles, is turbid and mixed with lymph, while the membranes present no trace of that granular appearance so remarkable in true hydrocephalus, and the various organs of the body are free from tubercle.

If we inquire as to the symptoms by which this disease was attended during the life-time of the patient, we shall most likely find that they present fresh reasons for distinguishing between it and hydrocephalus. We shall learn that the attack came on in a previously healthy child, that it was either ushered in by convulsions, or that they soon occurred, that they returned often, and probably that they continued with but little intermission until death took place. We shall be told, moreover, that the disease sets in with violent vomiting and intense febrile excitement, and that having commenced thus severely, it advanced rapidly and without remission, to its fatal termination, which may have arrived in the course of a few hours, and is seldom delayed beyond the first week.

Some cases of this simple encephalitis are recorded by Gölis, under the name of Water-stroke; I will select one of them as affording a good specimen of the most acute form of the disease.*

"A little girl, 14 months old, who was healthy and strong and fat, was suddenly seized at 5 o'clock in the morning, after a restless night, with violent fever and frightful general convulsions. Medical assistance was at once obtained, and in less than thirty minutes from the commencement of the attack, four leeches were applied behind the ears, which drew three ounces of blood: calomel and other remedies were administered internally, and mustard poultices were put to the soles of the feet. These measures soon alleviated the symptoms, but the relief lasted for but a very short time; the fever returned as intensely as before, convulsions came on again, attended with opisthotonos, and the child became comatose. Hemiplegia succeeded; the pupils became extremely contracted; complete loss of vision, and spasmodic twitching of the muscles of the face, soon followed, and thirteen hours after the first convulsive seizure, in spite of most appropriate and energetic treatment, the little child died.

"The vessels of the scalp were loaded with blood, and the skull was so intensely congested as to appear of a deep blue colour; the sinuses were full of coagulated blood

* Praktische Abhandlungen, etc. vol. i. case 2.

mixed with lymph, and all the vessels of the brain and its membranes were enlarged and turgid with blood.

"A large quantity of coagulated lymph covered the convolutions of the brain and the corpus callosum like a false membrane, and furnished a delicate lining to the lateral ventricles, whose walls were softened and in part broken down. The ventricles contained about $\frac{3}{4}$ of turbid serum, and there was a considerable quantity of lymph at the base of the brain."

As I have never seen an instance of this most rapid form of meningitis, I will draw for another illustration of it upon that valuable storehouse of facts, Dr. Abercrombie's work on Diseases of the Brain.*

"A child, aged 2 years, 21st May, 1826, was suddenly seized in the morning with severe and long-continued convulsions. It left her in a dull and torpid state, in which she did not seem to recognise the persons about her. She had lain in this state for several hours, when the convulsion returned, and during the following night it recurred a third time, and was very severe and of long continuance. I saw her on the morning of the 23d, and while I was sitting by her, she was again attacked with severe and long-continued convulsion, which affected every part of the body, the face and the eyes in particular being frightfully distorted. The countenance was pale, and expressive of exhaustion; the pulse frequent: her bowels had been freely opened by medicine previously prescribed by Dr. Beilby, and the motions were dark and unhealthy. Farther purging was employed, with topical bleeding, cold applications to the head, and blistering. After this attack she continued free from convulsion till the afternoon of the 23d; in the interval she had remained in a partially comatose state, with frequent starting; pulse frequent, but feeble; pupil rather dilated: she took some food. In the afternoon of the 23d the convulsion returned with great severity; and on the 24th there was a constant succession of paroxysms during the whole day, with sinking of the vital powers; and she died early in the evening.

"On removing the dura mater, the surface of the brain appeared in many places covered by a deposition of adventitious membrane betwixt the arachnoid and pia mater. It was chiefly found above the openings between the convolutions, and in some places appeared to dip a little way between them. The arachnoid membrane when detached appeared to be healthy, but the pia mater was throughout in the highest state of vascularity, especially between the convolutions; and when the brain was cut

vertically, the spaces between the convolutions were most strikingly marked by a bright line of vivid redness, produced by the inflamed membrane. There was no effusion in the ventricle, and no other morbid appearance."

It would not answer any useful purpose to multiply the recital of cases, since though there are great varieties in the duration of the disease, yet its general features are the same in almost every instance, and will, I think, usually be recognised by you as betokening an affection very different from ordinary hydrocephalus.

The morbid appearances are sometimes found to vary both in their degree and in their extent, without any corresponding difference being observed in the symptoms. With the exception of its course being more rapid, Gölis's case differed but little from that recorded by Dr. Abercrombie. I believe that in the majority of instances the lining of the ventricles is affected, and it is certainly more common for the membranes at the base of the brain to be involved in the disease, than for it to be entirely limited to those at the convexity. It may also be doubted whether the membranes of the spinal cord are not also affected in the greater number of cases; but unfortunately the histories of but few post-mortem examinations contain complete details with reference to their condition. I have had the opportunity of examining five fatal cases of acute meningitis in infants or children, and in three of these there was not only abundant deposit of lymph on the surface of the convolutions, but it was effused copiously at the base of the brain; the ventricles contained turbid serum intermixed with flakes of lymph; and the membranes of the spinal cord were inflamed, and coated in many parts with lymph and pus. In all of these three cases the children were under a year old, and the disease came on without any assignable cause, as it did also in the case of another little boy, aged 13 months. In that instance, however, no lymph was effused anywhere; the ventricles contained only a small quantity of transparent fluid, and the most remarkable appearance consisted in an intense injection of the pia mater of the convexity and of the surface of the convolutions for about two lines in depth, the cerebral substance in that situation being softened, so that portions of it were removed when the pia mater was stripped off. In another instance, where all the symptoms of encephalitis succeeded to an injury of the neck and head, the membranes at the convexity of the brain, and also the choroid plexuses and the velum interpositum, were intensely red; there was much effusion in the sub-arachnoid tissue; not much in the lateral ventricles, though their lining was

* Case 10, p. 52.

considerably thickened. The substance of the brain was injected and much softer than natural, especially towards the centre of the organ and at its left side. In both of these cases the membranes at the base of the brain were perfectly healthy, but the spinal cord was not examined.

I have seen two other cases in which I believe that inflammation existed of the meninges both of the brain and spinal cord, but in which I had no opportunity of making an examination after death. These seven cases constitute the whole of my experience in this formidable disease.

Acute inflammation of the brain or its membranes is fortunately of very rare occurrence in childhood, except as the result of fracture of the skull, or of injury to the head or neck. Exposure to the heat of the sun has been known to induce it; sometimes it occurs in children who are apparently recovering from scarlatina; and at other times it occurs without our being able to trace it to any definite cause.

In the treatment of this affection, our remedies must be, in the main, the same as we should employ to combat the acute inflammation of any other vital organ. Bleeding, purgatives, mercurials, and the application of cold, are the grand means on which we must rely; and these must be used with an unsparing hand if we would have any chance of saving our patient. Our prospect of success, however, depends almost entirely upon our seeing the patient at the very outset. The case which I quoted from Gölis shewed you what extensive mischief may occur in thirteen hours, and instances are on record in which a greater amount of injury has been discovered after a still shorter train of symptoms. Even in those cases which do not run this extremely rapid course, and in which the mischief found after death is not so considerable, there is little less need for speedy as well as active interference, for if life be prolonged for a day or two without the disease being overcome, the patient often sinks into an exhausted, or, as the French call it, an *asthic* condition, in which active treatment can no longer be ventured on.

Formidable though these cases are, yet, if seen early, and treated actively, they may be regarded more hopefully than those in which the brain and its membranes become inflamed in consequence of the extension to them of disease beginning without the skull. You will occasionally see instances of this occurrence in children who have suffered from scrofulous disease of the cervical vertebrae, when a life of suffering is terminated by a most painful death; or inflammation of the brain, proving very quickly fatal, may come on in a child who has long had discharge from the ear, with

occasional attacks of ear-ache. Vague threatenings of mischief in the head may perhaps have existed for some time, just sufficient to excite your apprehension, but not so serious or definite as to call for decided interference; and yet, when death takes place, you will find it almost impossible to reconcile the existence of lesions so extensive and of such long standing as a post-mortem examination discovers, with the long-continued absence of definite cerebral symptoms.

In Dr. Abercrombie's work on Diseases of the Brain,* an account is given of a boy, aged 14 years, who had been affected for two months with headache and discharge of matter from the right ear. A week before his death the pain increased, and was accompanied by great debility, giddiness, and some vomiting. He continued in this state, without stupor or any other remarkable symptom, until the day of his death, when he was suddenly seized with convulsions, and died. An abscess was found in the middle lobe of the right hemisphere of the brain, and another in the cerebellum, and there was extensive caries of the pars petrosa, with effusion of three ounces of fluid in the ventricles.

I have quoted this case in order to impress upon your minds that every, even the slightest, indication of cerebral disturbance is to be looked on with the greatest anxiety in children who have suffered from chronic otorrhœa. Your solicitude must be redoubled if the discharge from the meatus had ever been attended with the formation of abscesses at the back of the ear, or burrowing between the cartilage and the bone, since they would render it extremely probable that caries of the bone had existed, and that the membranes of the brain had been reached by the advance of the disease.

Inflammation of the brain occasionally supervenes on disease of the internal ear, even though there have been no actual exposure of the dura mater by destruction of the bone, and though attacks of otitis have not been of frequent occurrence. Attacks of otitis, indeed, are of importance, not merely on account of the occasional supervision upon them of inflammation of the brain, but also on account of the severe suffering by which they are always attended. In many instances, too, needless alarm may be excited by the symptoms of inflammation of the ear being supposed to betoken that the brain itself is the seat of the mischief; and hence it is very desirable to become familiar with the diagnostic marks that distinguish the less from the more dangerous affection.

* Page 137; quoted from Mr. Parkinson, in *London Med. Repository*, March, 1817.

Inflammation of the internal ear is most frequent before the completion of the first dentition, and is by no means rare in young children who are perfectly unable to point out the seat of their sufferings. The attack sometimes comes on quite suddenly, but usually the child is fretful and languid for a period varying from a few hours to one or two days before acute pain is experienced. In this premonitory stage, however, it will often cry, if tossed or moved briskly, and noise seems unpleasant to it, and it does not care to be played with; while children who are still at the breast shew a disinclination to suck, though they will take food from a spoon. The infant seeks to rest its head on its mother's shoulder, or, if lying in its cot, moves its head uneasily from side to side, and then buries its face in the pillow. If you watch closely, you will see that it is always the same side of the head which it seeks to bury in the pillow, or to rest on its nurse's arm, and that no other position seems to give any ease except this one, which, after much restlessness, the child will take up, and to which, if disturbed, it will always return. The gentle support to the ear seems to soothe the little patient; it cries itself to sleep, but after a short dose some fresh twinge of pain arouses it, or some accidental movement disturbs it, and it awakes crying aloud, and refusing to be pacified, and may continue so for hours together. Sometimes the external ear is red, and the hand is often applied to the affected side of the head; but neither of these symptoms is constant. The intensity of the pain seldom lasts for more than a few hours, when a copious discharge of offensive pus takes place from the ear, and the child is well. Sometimes, indeed, this complete cure does not take place, but the earache abates, or altogether ceases for a day or two, and then returns, no discharge, or but a very scanty discharge, taking place, while for weeks together the child has but few intervals of perfect ease. In infants earache seldom follows this chronic course, though I have occasionally seen it do so in older children.

In children who are too young to express their sufferings, the violence of their cries, coupled with the absence of all indications of disease in the chest or abdomen, naturally lead to the suspicion of something being wrong in the head. There are three circumstances, however, which may satisfy you that the case is not one of ordinary hydrocephalus: the child does not vomit, the bowels are not constipated, and there is but little febrile disturbance. The loud and passionate cry, the dread of movement, and the evident relief afforded by resting one side of the head, are evidences of the ear being affected; while in many instances the

movement of the hand to the head, and the redness of the external ear, with the swelling of the meatus, concur to make the diagnosis easy. Sometimes, when in doubt, you will be able to satisfy yourselves that the cause of suffering is in the ear, by pressing the cartilages of the organ slightly inwards, which will produce very evident pain on the affected side, while, if practised on the other side, it will not occasion any suffering.

The treatment of this painful affection is very simple. In many instances the suffering is greatly relieved by warm fomentations, or by applying to the ear a poultice of hot bran or camomile-flowers. A little oil, to which some laudanum has been added, may be dropped into the ear, and repeated from time to time; while, if the pain be extremely severe, or have continued for several hours, it may be wise to apply a few leeches to the mastoid process. If the earache return frequently, a small blister should be applied behind the ear, or slight vesication may be produced by means of the acetum cantharidis.

The possible supervention of inflammation of the brain must of course be borne in mind, and any indication of its approach must be immediately combated; but fortunately this occurs less frequently as a complication of otitis than as a sequela of long-continued purulent discharge from the ear, which has probably been attended with constant though not very severe pain in the head. A little boy, 4 years old, has for some time been under my care who has suffered for the last eighteen months from purulent discharge of a very offensive character from both ears. After this discharge had continued for six months, an abscess formed behind the left ear, which, on being opened, gave issue to zij . of very fetid pus. A month afterwards a large portion of the mastoid process of the left temporal bone was exfoliated, and for several weeks after this occurrence the left side of the face was frequently thrown into a state of twitching movement, which showed that some of the branches of the portio dura had been involved in the disease. This symptom has disappeared for the past nine months, but the discharge continues as fetid as ever, though now much more profuse from the right than from the left ear; and the abscess has long ceased to discharge, though a fistulous opening still continues, which leads down to the diseased bone. This little boy is in almost constant suffering from headache. Sometimes the pain is very severe, and quite prevents his sleeping, and then it will abate for several days or weeks without any evident cause. There can, however, be little doubt but that sooner or later an acute attack of inflammation of the membranes of the brain will come on, and prove quickly fatal.

In those cases where offensive puriform discharge from the ear has been of long continuance, and the matter is sometimes tinged or streaked with blood, astringent injections must be used only with the greatest care, while their employment is not at all advisable if exfoliation of bone has taken place, since in such a case not only is the internal ear disorganised, but the dura mater has very probably become exposed. Attention to cleanliness, by frequently syringing out the ear with warm water, in a solution of gr. j. or gr. ij. of the acetate of lead in an ounce of water, would be all the topical treatment on which it would be safe to venture, while the most sedulous attention must be paid to the general health of the patient.

It still remains for me to notice one singular form of cerebral disease, which, though not confined to children, is seen much oftener among them than among adults, namely, phlebitis of the sinuses of the dura mater. In grown persons it has usually succeeded to some injury of the head, but in the child it has generally been observed as a consequence of long-continued purulent otorrhoea, combined with disease of the temporal bone, or it has been connected with disease of the frontal sinuses, or has followed an abscess of the scalp. In one or two instances, also, it has seemed to be excited by the presence of large collections of pus in distant parts of the body. M. Tonnelé, who has written a very valuable paper on inflammation of the sinuses of the dura mater in children, records one instance in which it coincided with a pleuritic effusion; and a somewhat similar case has come under my own notice, which I will relate, partly on account of its rarity, partly because it illustrates exceedingly well the morbid appearances observed in cases of this description.

A healthy little girl was attacked by scarlatina, when eight months old. The attack was not severe, but, after it had passed away, she did not regain her previous health, but continued restless and feverish; she was sometimes sick, and her eyelids were often slightly swollen. A fortnight after the rash appeared, she had one or two violent convulsive seizures, but they ceased after her gums were lanced, and did not appear to be in any way connected with her subsequent illness. She continued out of health until she was 10½ months old, when her mother noticed, in addition to the puffiness of the eyelids, a swelling of the legs and abdomen, for which she came under my care when eleven months old. The legs were then very oedematous, and fluctuation was distinctly felt through the parietes of the abdomen, the urine being scanty and high coloured. In the course

of about three weeks her condition had improved considerably, the urine having increased much, the anasarca having greatly diminished, and the abdomen being 1½ inch less in circumference. A fit of convulsions now came on without any apparent cause, but no symptoms of cerebral mischief followed it, and the convulsion did not return. After the lapse of another week a discharge of sero-purulent fluid took place from the umbilicus, and continued for several days in quantities of from a quarter to half a pint daily. This discharge was attended with an improvement rather than a deterioration in the child's health; but after it had continued for eleven days, fever and dyspnoea suddenly came on, with dulness on percussion over the right side of the chest, and absence of respiratory murmur in that situation. The discharge ceased for a week during the urgency of the thoracic symptoms, but these reappeared though scantily. The child now grew thinner and weaker, and sank into a state of hectic. No new symptom came on till she was suddenly seized with extreme faintness, amounting to almost perfect syncope. She rallied, however, under the use of stimulants, but 48 hours afterwards the faintness returned, and terminated in death, without any convulsion having preceded it, just 5½ months after the attack of scarlatina, and two months after she came under my care.

On an examination of the body after death, pleurisy of the right side was discovered with about 3vj. of pus in the right pleura, and peritonitis with Oij. of pus in the abdomen; the passage being still traceable through which the fluid had escaped at the umbilicus.

The dura mater adhered firmly to the skull, along the posterior half of the longitudinal sinus, at the torcular Herophili, and along the left lateral sinus; but elsewhere it was easily detached from the cranium.

The sinuses on the right side were healthy, but the blood within them was almost entirely coagulated. The posterior half of the longitudinal sinus, the torcular, the left lateral and left occipital sinuses, were blocked up with fibrinous coagulum, precisely such as one sees in inflamed veins, and the clot extended into the internal jugular vein. The coats of the longitudinal and of the inner half of the lateral sinus were much thickened, and their lining membrane had lost its polish, was uneven, and presented a dirty appearance.

There was some congestion of the arachnoid, a considerable quantity of fluid in the ventricles, and sections of the brain presented more bloody points than natural, especially on the left side. The base of the brain was perfectly healthy on the right side, but there was great venous congestion be-

neath the middle lobe of the left hemisphere, and the cerebral veins in that situation were distended with coagulum, and their coats were thickened. Towards the anterior part of the left middle lobe were four apoplectic effusions, in all of which the blood retained its natural colour. Each of these effusions was connected with an obliterated and distended vein. The largest clot extended an inch into the substance of the brain; the others were of smaller extent.

I cannot speak to you of any symptom as pathognomic of this occurrence. It usually comes on, as in this instance, in much debilitated children, and though it generally follows some injury or disease in the neighbourhood of the brain, you would bear in mind the possibility of its occurrence whenever large collections of pus exist in any part, and would draw a very unfavourable prognosis in the event of head symptoms coming on under such circumstances.

THE GASTRIC JUICE.

LEHMANN has confirmed the statements of Pelouze and of Bernard and Barreswill, regarding the absence of free hydrochloric acid in the gastric juice, and has further indisputably proved the existence of free lactic acid in that secretion. To prevent any fallacy in the experiments, dogs were kept fasting for 12 or 16 hours, and then fed about a quarter of an hour before death with bones freed as much as possible from skin and fat. The gastric juice was almost perfectly clear, being scarcely opalescent. From 100 parts there were obtained 1·808 of solid matter, 0·25 of hydrochloric acid, and 98·067 of water. This hydrochloric acid is formed by the decomposing action of the lactic acid at a certain degree of concentration, even in the cold, upon certain chlorides, especially those of calcium and magnesium, but not those of potassium and sodium. To prove the presence of lactic acid itself with certainty, the gastric juice was concentrated *in vacuo* to one twelfth of its volume, the residue mixed with alcohol of 0·85, the spirituous solutions from several stomachs evaporated to the consistence of a syrup, and the residue exhausted with absolute alcohol. The residue of this was exhausted with ether, and the ethereal extract mixed with water, to remove the fat, and filtered. On further concentration, more drops of oil separated from the filtrate, and the fluid still contained hydrochlorate of ammonia.

The liquid was partly saturated with lime, partly with magnesia, and the salts formed were purified by several recrystallizations from alcohol and water. The magnesian salt gave results approximating very closely to the formula $Mg\ O, Ca + 3\ HO$.—*Dr. Day's Report on Chemistry, 1847.*

LECTURES ON ALBUMINURIA, OR THE MORBUS BRIGHTII.

Delivered at Guy's Hospital,

By G. OWEN REES, M.D. F.R.S.

Assistant Physician to the Hospital, and Principal Medical Officer to the Pentonville Prison.

GENTLEMEN,—In treating of albuminuria, or the morbus Brightii, the subject of the present lecture, I shall commence with a description of its pathology, and describe to you the exact condition of the patient, so far as we are at present informed, both as to the solids and fluids of the organism. In this manner, I believe, you will more easily be enabled to appreciate the true nature of the disease, and gain a more comprehensive view of a subject, which bears most intimate relations to the diseases of almost every important organ.

Premising, therefore, that morbus Brightii is a form of diseased kidney, producing albuminuria in the urine, and generally associated with anasarca, let us first consider the state of the fluids:—This disease may be described in its humoral relations as a condition characterised by a discharge of the serum of blood with the urine, such discharge not necessarily being connected with an escape of red particles, and dependent on congestive or graver forms of disease in the kidney. As the degeneration of the kidney proceeds, changes occur in the state of the blood, which is not only impoverished by the drain of albumen into the urine, but is found to contain large quantities of urea as a constituent, owing, apparently, to the difficulty experienced in effecting the excretion of this proximate animal element, from the circulation as occurs in health. This is then a general sketch of the humoral pathology of albuminuria. I shall next notice, in like manner, the phenomena observed in the solids.

In early cases of albuminuria, which have terminated fatally, by complication of important organs, the state of the kidney, which has led to the excretion of albumen in the urine, has been shown to be one of congestion. The subsequent phases of the disease have given evidence, on post-mortem examination, that the kidneys become eventually infiltrated by a white deposit, which in many advanced cases appears eventually to lead to contraction of the organ.

Now it scarcely ever happens that death occurs in this disease, but that the brain, heart, and not unfrequently the lungs, are found participating immediately in the production of death. In the train of causation,

however, it appears now pretty well established, that the kidney is the first, the principal, and the necessary organ to the production of the phenomena of this dangerous malady, and that the affections of other organs are to be regarded either as concomitants or consequences of the degeneration of kidney, and the subsequent deterioration of the circulating blood.

Having taken this general cursory view of the subject, I shall now proceed to describe to you the minute anatomy of the kidney in the healthy state in so far as it is necessary to understand the pathological conditions producing the morbus Brightii.

In the diagram I have here, you will observe that the uriniferous tubules, which assist in forming the excretory duct of the kidney, are completely surrounded by a venous plexus, which forms a portal system, analogous to that of the liver, through which all the blood returned from the Malpighian body, must circulate before it can find entrance into the renal or emulgent vein.

The vessels of the Malpighian bodies are extremely delicate, and apt, therefore, to rupture, or to allow exudation through their coats; and congestive disease of the kidney, caused either by exposure to cold, or suppressed perspirations, would appear easily thus to effect the passage of the serum or liquor sanguinis into the urine. Now, from the arrangement of the portal system of veins above alluded to, you will perceive that a cause for congestion of the Malpighian bodies may exist either in the enlargement of the uriniferous tubes, or in the presence of any morbid deposit immediately around or within the plexus, because in both cases the plexus will be pressed upon, and the passage of blood from the Malpighian bodies to the renal vein will be interfered with. The nature and position of this deposit have lately been described by Dr. Johnson as fatty matter, existing in excessive proportion in the epithelium lining the uriniferous tubes. According to this view, the tubes become dilated by this excessive secretion of fat, and thus, pressing upon the portal plexus of veins, cause obstruction and congestion in the Malpighian bodies, and consequent exudation of the serous fluid into the uriniferous tubes.

Now whether this obstruction be caused by a deposit of fatty matter in the epithelium lining the tubes, or by the deposit of an albuminous material in any part of the secreting portion of the kidney, the drain of albumen from the blood may be equally well produced, and I am anxious to impress this upon your minds, for, whether the late views which have been propounded in relation to the existence of large quantities of fat in kidneys affected by the white mottling be correct or not, we must not forget that

obstructed circulation through the kidney is still to be regarded as the immediate cause of albuminous urine, and therefore all that has been done for the pathology of the disease in regard to the fluids remains unaffected.

As respects the opinion that fatty matter constitutes the leading character of the disease, we are bound to receive the statement with caution, and I will now show you a comparative examination I lately made between two kidneys,—one taken from a healthy man who died a violent death, and the other from a case of albuminous urine of some duration, and in which the organ was enlarged, and presented a greyish, soft, and greasy appearance:—

	Disease.	Health.
Water . . .	81.277	74.83
Fatty matter . .	2.902	1.86
Urea . . .	0.145	a trace
Other solids . .	15.676	23.30

We observe here that the diseased kidney contained a much larger quantity of fatty matter than the healthy organ, notwithstanding that its solid matters, taken together, weighed less in the hundred parts. But let us now examine this question in relation to the solids only, which is the correct way of regarding it, and we shall perceive that when compared with morbid growths in general, we have not much fat present in this diseased kidney; that is to say, that if the abnormal deposit were composed of the material which has been found constituting tubercle in the abdomen, we might have present quite as much fat as this kidney contains. Thus, tubercle in the abdomen has been found to contain 25.4 fatty matter in every 106.18 of its solids; scirrhus, hard as it is, has been found to contain as much as 8.05 of fatty matter in 75.2 of its solid matters. This analysis, therefore, so far as the chemical evidence goes, scarcely carries out the view of fatty degeneration; and if to this we add the physical characters of the deposit, as it can be occasionally examined by the touch, we shall, I think, be inclined to believe it allied rather to scirrhous or tubercular matter, containing fat as a constituent, than as fatty matter alone. As regards microscopic evidence in determining whether a mass be composed of fat or not, it can do little more than determine the character of the surface; for even with the naked eye, and with large masses, we are aware how difficult it is to form an opinion on such a point as this, if we are not allowed to assist our judgment by other senses, and more especially by the sense of touch. It is difficult to believe, indeed, that this disease can consist of a true fatty degeneration, were it only from our never having yet seen a kidney approaching to the condition of the

liver when it assumes the complete fatty character, notwithstanding that the kidney has been now carefully examined for many years.

Let us now consider under what other circumstances than immediate congestion of the kidney albumen may exist in the urine.

It is probable that albuminous urine occurs very frequently during the last hours of life in persons dying from disease quite unconnected with kidney affection, a tendency to general passive effusion of serum existing, which may take place into the tubuli uriniferi, as well as other structures. For this reason it is never well to draw a conclusion from the examination of urine either immediately before or after death.

It is conceivable, also, that obstruction to the circulation of blood in any part of its course through the great system of vessels may tend to produce albumen in the urine as a result of congested kidney; but, though I am acquainted with several instances rendering this probable, I am not yet satisfied that such a case has been observed in which there has been entire freedom from renal disease, or only a temporary congestion, and yet albumen in the urine.

Of course, where blood exists in the urine, from whatever cause, we must expect albumen to be present, but I am now speaking of specimens containing no red particles as distinguishable in the secretion, but merely albumen.

Many loose statements have been made at different times in reference to the presence of albumen in the urine, and among the more prominent it may be mentioned that it has been believed by some that salivation tended to produce albuminous urine. I examined carefully into this point, and ascertained on 15 consecutive cases, in the foul wards of this hospital, that salivation was not attended by albuminous condition of the secretion. I of course took care that the individuals who were about to be subjected to salivation had not a tendency to disease of the kidneys. The existence of the erroneous impression above alluded to may probably admit of explanation. The fact is, that persons who are the subjects of albuminuria often become salivated very rapidly, and on very small doses of mercury, and such cases of salivation have, in all probability, formed the subjects of experiment. Patients suffering from simple dyspepsia, too, have been stated to pass albuminous urine very frequently, and also many persons after taking a full meal, though they may not have any important disease of the kidneys. These two latter statements are to be attributed to an imperfect method of examining the urine. The indications afforded by the presence of an excess of phosphate of lime, which is precipitated on boiling the urine,

having been mistaken for the reaction of albumen.

It will doubtless suggest itself to your minds, that, before the deposit occurs in the kidney, or before the tendency to congestion becomes developed, some changes must have taken place in the blood, as a necessary antecedent condition; that, in fact, the deposit of material upon which the mottling of the kidney in this disease depends, and which has produced albuminous urine, by causing obstruction and congestion, could not have appeared but as the result of the circulation of unhealthy blood through the organ.

The first congested state of the kidney, it may be argued, can scarcely exist but as the result of general disease, in which the blood must be involved. However this may be, it is well that we should wait for the development of a more extended pathology, and occupy ourselves in careful observation and research, rather than attempt to form a judgment on a subject concerning which we have as yet no sufficient grounds for the formation of an opinion. All that we have made out as yet in relation to this part of the subject is, that the kidney, so far as the solids are concerned, is the first affected in the chain of causation for the production of the phenomena of morbus Brightii.

If we remember that the albumen existing in the urine is necessarily derived immediately from the blood, we shall at once perceive that the constitution of that fluid will be greatly altered during its progress; and I will now proceed to describe to you the changes which chemical and microscopical analysis have shown to take place in the blood of those affected by albuminaria in its several stages.

Urea is now universally allowed to be present in the blood in this disease, and its presence is regarded as the result of retained secretion; the conditions under which the kidneys are placed not permitting them to discharge their functions in the usual and proper manner. In albuminuria, then, urea is found circulating; but this is not the only respect in which the blood differs from the healthy standard. In the early stages of the disease, the blood shows a great deficiency of albumen, as a result of the loss of that principle through the kidney; and when drawn, the specific gravity is often remarkably low. Dr. Christison mentions a case in which it was 1019; and I have observed it as low as 1015, instead of 1029 to 31, which may be regarded as the healthy standard.

As regards the proportion of fibrine in this diseased blood, it is not necessarily much changed. When, however, any inflammatory complication occurs in the course of the disease, then, as under other abnormal

conditions, the blood is found to contain fibrine in excess, and is not unrequently buffed and cupped. In early stages of the disease, the red corpuscles are also not generally changed in proportion.

Now, as the disease advances, we find that the proportion of albumen in the blood, so far from being below the natural standard, occasionally undergoes an increase in proportion; but this is remarked chiefly in those advanced stages in which the albumen begins to disappear from the urine: a case not uncommonly met with, and to which I shall hereafter have to draw your attention. Now, even in the early stage of degeneration, when little more than congestion is present, it sometimes happens that death occurs from sudden apoplectic seizures; and I once had an opportunity of examining blood obtained from such a case, and found not only the general humoral indications of the early stage, but also a considerable quantity of urea in the blood; and it appears, also, from the observations of others, that the presence of this constituent principle of the urine is among the first variations from the healthy state occurring in Bright's disease. How far we have a right to consider the symptoms characterising this affection, however, as resulting from the circulation of urea in any stage, I shall not here stop to inquire, but leave it far after consideration.

Those among you who have been in the habit of frequenting the wards of this hospital, have, doubtless, had occasion to remark the anæmised appearance of patients who are the subjects of albuminuria. There is the same pasty, dingy skin, and fulness of feature, observed in chlorosis, and in those who have suffered from hæmorrhages. Now, though we can at once perceive a sufficient cause for the deficiency of albumen in the blood, in the drain of that principle by the urine, the cause in operation tending to the decrease of the proportion of red corpuscles is not so immediately obvious.

The anæmia produced by large losses of blood is easily explicable; a discharge of red colouring matter has occurred, and the skin is blanched, but the anæmia of the morbus Brightii belongs to a different category, and would appear to be brought about much in the same manner as that of persons who are rendered pallid by the long continuance of leucorrhœa or gonorrhœa, or any form of discharge tending to rob the blood of its albumen; for it must be remembered that, though we occasionally observe small quantities of blood passed in the course of the disease, still the leading feature of the morbus Brightii consists in the presence of albumen alone in the urine, to the exclusion of the red corpuscles. And I will now proceed to describe the theory

on which I have attempted to explain the deficiency of red particles observed in advanced stages of Bright's disease. The facts on which this theory is founded are the following:—

1. In health the corpuscle is supplied with nourishment by the chyle.

2. The chyle is of lower specific gravity than the liquor sanguinis in which the corpuscles float.

3. In the early stages of morbus Brightii the specific gravity of the liquor sanguinis is greatly diminished.

Now in red blood of every kind the corpuscles float in a liquor which is of the same density as the fluid contained within them. This is a necessary result of the physical law of endosmosis, because the blood-corpuscle is a membranous vesicle, and if its contained liquor were by any chance to become for a moment either specifically lighter or heavier than the fluid in which the vesicle floated, endosmotic currents would immediately be set in motion through the membrane, and the result of such changes would be the eventual acquirement of a condition of stasis in which the fluid within and the fluid without the corpuscle would be found of the same specific gravity. Now the liquor sanguinis in which the corpuscles float is of much higher specific gravity than the chyle, and when therefore that fluid comes in contact with the blood-corpuscles as it enters the venous system, it meets with these vesicles, which contain a fluid of higher specific gravity than itself, and consequently a considerable quantity of this lighter fluid passes through the coats of the vesicle. This change, which appears necessary to the maintenance of the healthy condition of the blood-corpuscle (inasmuch as it is the manner in which iron enters to assist in the formation of hæmatosine), cannot occur to its normal extent if the specific gravity of the liquor sanguinis be lessened so as to approach that of the chyle, because in such case there will be very little ferruginous matter passing into the corpuscle, and scarcely any at all if the liquor sanguinis is so degenerated as to be below the density of the chyle; for we must remember that, though in endosmosis there is always a reciprocal change, which causes the fluids placed on either side of the membrane to pass simultaneously, still the heavier passes to the lighter in a much less proportion. This is easily seen under the microscope. When thus a fluid of 1010 is added to blood the corpuscles become swollen, whereas the same saline solution strengthened to 1060 or 70 rapidly collapses them. It is thus, then, on the fact of endosmotic change not occurring to its normal extent that, I believe, we may very fairly attribute the deficiency of red corpuscles in albuminuria; these

important bodies not receiving their nutrition to the proper extent.

The urine secreted in the course of this disease varies greatly both in quality and quantity. Many of you are aware that it is often characterised by a very low specific gravity, and that this indication is always considered as unfavourable in prognosis. This anxiety is felt, for the reason that a low specific gravity is characteristic of the advanced stages of the morbus Brightii. In the early stages of the disease there is generally but little deviation from the natural standard, either in the quantity of urine excreted or its specific gravity. This must be regarded as the general rule, to which, indeed, there are exceptions of not very unfrequent occurrence, and which shew the quantity of urine discharged to have been less than the healthy proportion, rather than that any change in specific gravity has taken place. Thus, the specific gravity of urine in recent cases is rarely lower than 1017. As regards the quantity of urine passed during 24 hours, it may be regarded as about natural, namely, from 35 to 50 ounces a day, or, if anything, rather below than above this; for, when any variation does occur in the quantity of urine voided in early stages of albuminuria, we shall generally find it to consist in a diminution rather than an increase; and, indeed, we sometimes meet with cases in which either total suppression is observed, or only a few ounces are excreted during the day. In early stages of the disease the urine is occasionally voided either of a blood-red or dark-green colour,—an alteration owing in both cases to the presence of blood. This admixture of blood, however, is in no way to be considered as a necessary, or even general, symptom of the morbus Brightii.

As the granular degeneration of the kidney advances, we find very great changes occurring in the quality of the urine. Thus, a tendency to an increased discharge of water from the kidney is observed, and the quantity of urine, so far from having a tendency to pass below the natural standard, frequently amounts, during the 24 hours, to double the normal quantity or more, from 90 to 140 ounces sometimes being excreted, while the specific gravity is greatly decreased, varying from 1014 to 1006. Now this decrease of specific gravity is not merely brought about by a large quantity of water passing through the kidney, and so diluting the urine, for it has been observed in cases where the urine excreted during the 24 hours scarcely exceeded the natural quantity. This being the case, it is obvious that the solid matters passing through the kidneys for the depuration of the blood are in less than healthy proportion; while water is occasionally in excess. A little reflection will

suffice to shew the reason for this. The blood, you are aware, contains an excess of water in these advanced cases of albuminuria, and a great deficiency of solid matters; and, therefore, the blood has less solids to pour from its mass for the process of depuration. This reasoning, too, applies to some cases of the early stage in which the same deficiency of solids evacuated during the 24 hours is observed. As regards the constitution of the urine, it is worthy of remark, that even the presence of albumen, which exists generally as a symptom in every stage of the morbus Brightii, and is its principal characteristic, is not universally present; and even in confirmed cases, and those, too, in the advanced stages of the affection, we occasionally observe it absent for weeks together.

It is indeed, for the most part, in the advanced cases that the albumen will disappear for a period, and very frequently; when it does not entirely disappear, it is present only in very small quantity. It is chiefly in early cases that albumen appears in very large proportion,—a fact which it is extremely important to remember in connection with this subject.

THE NUTRITIOUS PROPERTIES OF RICE EXAGGERATED.

M. BRACONNOT has recently examined various kinds of vegetables in reference to their utility as articles of food. With respect to *rice*, it is commonly set down as a most nutritious substance. From personal observation, however, in countries where rice forms a staple article of food, he believes that this is a popular error. If not eaten with meat, it is generally taken with milk, or some other nutritious substance. He is aware that this opinion is opposed to the views of many respectable authorities, but he considers the amount of support which rice is capable of affording, deserves a closer investigation than it has yet received, especially as it is now being introduced as food for the supply of the army. It is a common saying that rice is the *sole* nourishment of the Hindoos; but M. Lesquerri, who lived for a long time at Pondicherry, and watched closely the habits and customs of the natives, states that their food is essentially vegetable, and rice is the basis of it,—the lower castes only eating meat; that all eat a mixture called *Kari*, which is a compound of meat, fish, and vegetables, mixed with boiled rice and a little water. Few persons can have an idea of the enormous quantity of rice which an Indian will eat. No European could possibly eat so much at one sitting; the natives find, indeed, that they do not derive much support from this vegetable, and therefore generally adopt the practice of eating bread.

Original Communications.**A REMARKABLE CASE OF SPONTANEOUS GANGRENE.**

WITH OBSERVATIONS ON THE NATURE AND TREATMENT OF THIS DISEASE.

BY HENRY WILLIAM FULLER,
M.B. and L.M. Cantab.

Medical-Registrar at St. George's Hospital.

HARRIET DAVIES, a cook, æt. 37, of a somewhat delicate habit, was admitted into St. George's Hospital, on the 11th of June, 1846, under the care of Dr. Page.

She had been suddenly seized on the 8th instant, while apparently in good health, with acute pain in the right foot, which soon extended up the leg and thigh, and occasionally, indeed, up as far as the loins. This pain, which she described as of a burning and pricking character, began without obvious cause, while she was standing perfectly quiet. It was most acute, perhaps, on the inner side of the leg and thigh, but by no means confined to that situation, for the whole limb was so exquisitely tender, that the slightest touch caused intolerable pain. She immediately applied for medical relief, and an embrocation was ordered, the application of which caused very great suffering, and gave rise to slight abrasion of the skin over the tibia. Its use was accordingly discontinued, and medicine was administered internally instead. But no relief was obtained: the pain continued as severe, if not worse than ever; she was unable to sleep, lost her appetite, and felt greatly exhausted, so that she was induced on the 11th to apply for admission into the hospital.

On admission she was thin and pallid, but, unless her leg and foot were being touched, the expression of her countenance was usually tranquil. Her skin was cool; her tongue moist, and slightly coated; her bowels reported acting regularly; her pulse 90, soft, and rather weak; the catamenia regular. Her urine was tolerably abundant, clear, pale, acid, and albuminous, coagulating freely with heat and nitric acid. There was not, and never had

been, œdema of the extremities. She complained of pain in the loins, and of excessive pain in the right foot, leg, and thigh. On examination, her legs proved to be as thin as the rest of her body, and on the left were observed two or three spots, apparently the cicatrices of old cachectic ulcers; while on the right, were two similar spots, reported to have been caused by friction with the embrocation, in the first instance ordered to be applied to the leg. The right extremity, however, the seat of pain, presented no unusual appearance, and no difference could be detected between the two lower limbs. She laid in bed on her back, afraid to move, and in constant dread of her leg or foot being touched; and when we proceeded to examine it, she frequently cried out before contact had been made, giving rise to the suspicion of its being in some measure an hysterical affection. She appeared to suffer as much from a gentle touch as from tolerably firm pressure. She either could not, or would not, move her right leg, except by means of her hands, but over the left she had perfect control.

As there was at present no indication for treatment, a dose of senna only was administered internally, while tepid spirit lotion was applied to the affected limb; and the following day (12th), though she reported that she had been unable to sleep, and that the pain was by no means relieved, her tongue was perfectly moist and clean, her pulse soft and quiet, and her expression tolerably tranquil. A grain of opium was now ordered to be taken at bed-time, and poppy fomentations were substituted for the spirit lotion. Still the severity of the pain was such as to prevent her obtaining sleep, and the next day (13th), though in other respects much the same, she was low, fidgety, and restless. A third of a grain of morphia was now given at night, and the Decoct. Sarzæ c. Potass. Iodid. gr. iv. three times a day; and on the 16th, as nothing abnormal could be detected in the limb, and she was anxious to have something done topically for the pain, the leg was ordered to be lightly bandaged. But on the 18th, as the pain was no better, the bandage was taken off; and, on careful examination, the superficial veins were thought

to be perhaps rather more distinctly marked about the ankle and dorsum of the foot than in the corresponding extremity, and the limb itself rather cooler than natural. Still the difference in colour and in temperature was so slight as hardly to attract attention.

An eruption of pityriasis having made its appearance about the neck and chest, a sulphur vapour bath was ordered, the sarsaparilla and iodide of potassium and morphia were continued, and the linimentum opii applied to the affected limb. Still no alleviation of her sufferings was obtained; she got little sleep, took very little nourishment, and became daily weaker and more exhausted.

On the 22d a manifest aggravation of her symptoms took place. Her right foot, which was now decidedly colder than the left, assumed a mottled appearance, as if from incipient gangrene; the pain became, if possible, more severe, and her countenance anxious and expressive of suffering. Her tongue also, which had been hitherto clean and moist, became slightly furred, and her pulse weak and quick, varying from about 110 to 130 beats in a minute. Pulsation could be distinctly felt in the femoral and popliteal arteries. Mist. Camphoræ c. Tinct. Opii, ℥xv. was now ordered to be taken every four hours; ʒiv. of brandy were given daily; and the foot and leg were wrapped up in cotton wool. But the pain remained so severe that she obtained but little rest; and on each succeeding day, the discolouration of the skin assumed a darker hue, until by the 25th, the toes, and some parts of the foot, were perfectly black and cold. The depression which accompanied this state being considerable, wine was ordered to be given *ad libitum*, while the dose of morphia was continued at night, and the opium also during the day; but as the gangrene continued to spread, so that by the 27th the whole of the right foot was perfectly black, and the leg greatly discoloured almost up to the knee, while the pain at the same time remained excessive, the dose of opium was increased to gr. j. every two hours. Still no rest was obtained. On the following day (28th) a small patch of a most vivid scarlet colour presented itself on the hitherto black

foot, and by the 30th, almost all the toes on this foot, and the greater part of the foot itself, were of a brilliant scarlet colour. Nevertheless the whole foot remained perfectly cold. The leg was of a livid purple, or nearly black, with one or two patches of this vivid scarlet interspersed among it. The femoral artery could still be felt pulsating as usual, but it was hard and tense to the touch, and its contractions were evidently imperfect, as if from the blocking up of its cylinder. Her suffering was now, if possible, more distressing than ever, for, in addition to the exquisite pain in the right leg and thigh (the right foot was now hardly sensitive at all), she began to complain of a pain in the left foot, just analogous to that at first experienced in the right; and, as on examination, the limb was found to be colder than natural, it was at once clothed in carded wool, and the stimulants and opium were continued as before. Gangrene nevertheless began in this foot also, while the peculiar redness already alluded to, continued to extend up the right foot and leg, until it had entirely replaced the previous blackness, and reached, indeed, some distance above the knee. On the 5th of July one or two slight vesications appeared on the right leg, while the left, which had gone through precisely the same series of changes which had characterised the progress of gangrene in the other, was now becoming of the same bright colour. Her back also showed a disposition to slough, and she complained of great pain across the loins, while her inferior extremities from the hips downwards became now perfectly cold. Though since the commencement of her illness she had obtained but little sleep, had taken little nourishment, and had been supported chiefly by egg and brandy, wine, ammonia, and very large doses of opium, her constitutional symptoms had not become so materially worse as might have been expected: the character of her pulse had changed but little; it was usually soft and rather weak, varying from 100 to 130; her tongue had remained moist, and but little coated, and her countenance, though expressive of suffering, had all along retained its usual appearance. But her features now became collapsed, her pulse more feeble, and her tongue dry: the gangrene continued to spread

in the inferior extremities, reaching in both limbs above the knee, and she got steadily but rapidly weaker. On the 12th she refused to take nourishment or sufficient stimulus, and thus, after lying in a nearly comatose state* (from which, however, she could be roused, and was then quite sensible), about 24 hours, she sank on the 15th without any alteration in her symptoms.

During the last week of her existence some parts of her legs and feet which had presented the vivid scarlet appearance, above alluded to, became again perfectly black. Up to the evening before her death, no smell had emanated from her gangrenous limbs, but the stench then became almost insufferable.

The following is the result of the post mortem examination performed 23 hours after death.†

General appearances.—Body well formed, but very thin.

Thorax.—Some old but partial adhesions existed in both pleuræ. The lungs were healthy, with the exception of some slight congestion at the back part. No coagula were found in the pulmonary arteries or their branches. The heart itself was healthy; the aortic valves were slightly thickened but quite serviceable. The right cavities contained coagula of a mixed character, some being of a dark colour, others fibrinous and recently coagulated, and one, a small one, in the aortic, evidently of long standing: it was quite firm, for the greater part discoloured, and, when laid open, its centre was soft and cream-like. In the left ventricle was a conglum presenting the same characters as the one last described, but it was much larger and occupied a considerable portion of this cavity, being entangled and firmly fixed in the meshes of the fleshy columns, with which it appeared in some places to be connected by slender adhesions.‡ Nothing remarkable was observed in the thoracic aorta.

Abdomen.—The liver was healthy;

the spleen congested, but otherwise healthy. The intestinal canal and organs of generation presented nothing remarkable. The right kidney, much reduced in size, presented a well-marked specimen of granular degeneration, the cortical structure being much wasted; its artery and veins were quite healthy. The vessels of the left kidney were blocked up by firm coagula, which for the greater part had lost their colouring matter, and were slightly adherent to the internal coat. The coagula in the artery did not extend so far as they did in the vein. The kidney itself, much increased in size, presented a most curious appearance when cut into. Both its structures were for the greater part filled with an extensive deposit of a variegated appearance, being in some places of a tawny colour, in others of a yellow ochre, and in others of a brownish red; the various hues blending together, the yellow ochre, however, being the most marked and the most circumscribed. When pressed between the fingers this deposit was not friable, nor did it tear easily: in several places it was surrounded by a margin of a dark venous colour. The parts of the kidney in which this deposit existed, presented, when examined on the surface of these organs, an elevated appearance, the natural structure retaining its level. These appearances I have seen before, but they were always very partial, and the vessels in those cases were healthy. The pelvis and ureter were healthy. The abdominal aorta,* immediately after the giving off of the superior mesenteric, the common, internal, and external iliac arteries, were all blocked up by firm light coloured coagula of long standing, adhering slightly to the internal coat of these vessels. In some places the centre of these coagula was softened and cream-like. The internal coat of these arteries was neither thickened or in the least discoloured. The vena cava inferior, at the entrance of the common iliacs, was also blocked up by similar coagula, which were traced downwards into the various larger branches of these veins; but the upper part of the cava was quite free from these coagula.

* The opium was omitted on the 10th, and the stimulants only continued.

† The following description of the post-mortem appearances is taken from the case-book kept as a record in the museum of the hospital. It is from the able pen, and accurate observation, of Mr. Prescott Hewett.

‡ These coagula were precisely similar in appearance to those formed in the arteries of the inferior extremities.

* A preparation of these vessels, with the coagula they contained, has been preserved in the museum of St. George's Hospital.

Inferior extremities.—The skin of these parts, from the knees down to the toes, was greatly discoloured, being of a vivid red in the upper part of the leg, and gradually assuming a darker colour until it reached the foot, where it was quite black. There were several patches of discolouration also on the thighs. The toes were shrivelled and dry; the subcutaneous cellular tissue of these parts was, however, but slightly discoloured when compared with the colour of the skin. In the leg, the vessels on the fascia, covering the anterior surface, were most minutely injected, forming a beautiful network. The muscles were somewhat discoloured, and there was a slight effusion of fluid in the cellular tissue, but the muscles of the thigh were of their natural colour. All the larger arterial trunks which were examined were blocked up by coagula, precisely similar to those observed in the ilia; the arteries were traced down to the dorsum of the foot. The veins were also blocked up by similar coagula. No diseased appearance could be detected about the coats of any of these vessels.* The blood I examined microscopically, and could find in it no unusual appearance.

I have been thus precise, at the risk of being considered tedious, in narrating the particulars of this case, as its practical value appears to me to depend on the exact nature of its details. It is, I believe, identical in its nature with those cases of mortification, which, arising most frequently in old broken-down constitutions, have been usually classed under the term "Gangræna Senilis;" but I can find no case on record exactly similar to it, and presenting as it does peculiarities which bear directly on the origin of this form of gangrene, I have thought it not unworthy of being put on record.

[To be concluded in our next.]

MEDICAL PENSIONS.

THE French government has liberally conferred a pension on the widow of the late M. Pariset.

* I may mention that not only the arteries of the affected parts, but arteries in other parts of the body, were minutely examined by myself and others, with express reference to the existence of deposit, or any diseased appearance on their coats; and throughout the body they were found remarkably healthy.

CASES.

By JAMES J. ROSS, M.D.
Cambesmore, Sutherlandshire.

CASE I.—*Multilocular purulent cyst attached to the concave surface of the liver.*

CHRISTY MURRAY, Golopie, æt. 28: was some years ago in the Northern Infirmary, Inverness, for an affection of the knee-joint, over which she has ever since had an open issue. Her present illness commenced about three months ago, with violent vomiting, which was arrested by effervescing powders. She afterwards experienced pains through the abdomen, which have latterly settled in the right hypochondrium. For the last five weeks she has been confined to bed.

I first saw her on the 2d of May, 1842. She complains much of pain in the region of the liver, in which situation there is an evident fullness, perceptible to the eye, most remarkable towards the right extremity of the right lobe, below the inferior false ribs. On examination, a tumor is at once detected, extending fully four inches below the edges of the right ribs, tender on pressure throughout, but most so at its margin, and over its left portion in the epigastric region: percussion over it gives a dull sound. She is not much fallen off in flesh: there is no appearance of jaundice, the complexion being of a waxy dirty-white colour. Bowels reported costive; stools dark; urine natural; pulse 100, small, but slightly incompressible; month clammv, with bad taste; tongue white, much furred, and yellowish at its base; appetite much impaired. There is pain behind the right shoulder, and she cannot lie on the left side, owing to a dragging pain when she does so, and a sensation as if a "lump" were falling over to that side. She has had no treatment, except the soda powders above mentioned, and an occasional purgative of rhubarb pill or castor oil. —12 leeches to right hypochond.; ℞ Calomel. gr. i.; Opii, gr. ʒ M.; Pill morning and evening; Potass. Iodid. gr. xij.; Infus. Quassia, ʒij. M.: an ounce twice daily.

May 7th.—Leeches bled freely; no perceptible change in tumor, which is

still tender on pressure, and at times painful without its being touched. Bowels regular.—Blister over hypochond. Cont. Med.

13th.—Blister rose, with relief to the pain, which is now trifling. Pills stopped on the 10th, as the gums were becoming slightly tender. The visible projection of the tumor is greater than before, and now seems as if divided into two halves: the one apparently corresponding to the left, the other to the right, lobe of the liver; both feel hard, and there is no throbbing sensation felt by the patient.—Continue mixture. Iodine ointment to be rubbed in over tumor twice a day.

23d.—More pain for some days; has had some shiverings, and sweats much at night; pulse quick and soft; tumor softer, and more prominent.—Sherry wine, $\mathfrak{z}$ i. thrice daily; Liq. Mur. Morph. gtt. xl. p. r. n. Omitt. Ung. et Mist.

31st.—Morphia induced such sickness that it was not repeated. Pain more severe, and more frequent; tumor rounder, more bulging, and very tender; tongue red at the tip.

June 20th.—Tumor not softer than at last date; the sweating, rigors, and pain continue, with frequent vomiting.

August 12th.—Less pain; but diarrhoea has come on, to the extent of six or seven motions daily; vomiting and rigors as before; face sunk and anxious; sclerótica of a peculiar bluish leaden hue; fluctuation, which was obscurely felt about the 15th July, is now distinct in right lobe of tumor; urine scanty, thick, and offensive.— $\mathfrak{R}$ Mist. Cretae. $\mathfrak{z}$ v.; Tinct. Catechu, $\mathfrak{z}$ iv.; Tinct. Opii, $\mathfrak{z}$ j.; Vin. Ipecac. $\mathfrak{z}$ ij. M.; Coch. mag. post. sing. liquid. sedes.

30th.—Diarrhoea better; fluctuation more and more evident; but, there being no external redness, it is not easy to decide whether adhesions are yet formed with the abdominal parietes.

Sept. 5th.—The most prominent part of the swelling was punctured with a middle-sized trocar and canula, when there flowed about $\mathfrak{z}$ vij. of good well-coloured pus, without the least mawkish smell.—Increase wine to $\mathfrak{z}$ vij. daily.

6th.—Vomited frequently through the night; not much pain; pulse very weak; much emaciated.—A little porter, in addition to the wine.

12th.—Pus accumulating again: in-

deed, its evacuation had very little effect in diminishing the size of the tumor. Pulse slower, but still feeble.

Oct. 3d.—Abscess again punctured, and about $\mathfrak{z}$ v. of pus discharged, of a heavy smell, and containing small granules, mixed with what looks like debris from the walls of the cyst.

5th.—Easy for some hours after operation, but then pain recurred: opening patent, and discharging thin foetid serous fluid mixed with flocculent matters, and some pus and air-bubbles.

12th.—Discharge from wound continues; not much pain, but powers of life giving way fast; tongue aphthous and blistered.

19th.—Gradually sank, and died this morning at three o'clock.

I made a post-mortem examination of the body on the 20th Oct.

On reflecting the abdominal walls the right side of the cavity was found to be occupied by a tense, elastic, fluctuating tumor, extending from the concave edge of the liver to the iliac fossa. The right colon lay on its outer side, and somewhat anteriorly, closely connected to it by strong adhesions, requiring the knife for their separation. The outer side of the tumor was adherent superiorly, over a space of about three inches in diameter, to the abdominal parietes; and in the centre of this space was the opening made during life by the trocar. The mass was closely bound down on all sides by adhesions. The liver itself only descended very slightly below the margins of the ribs: its convex surface was united to the peritoneal covering of the diaphragm by a good many pretty firm bands of false membrane. These were torn through, the part of the diaphragm, connected with the liver by its coronary ligament, separated from the rest of the muscle, and the tumor being freed from its connexions partly by tearing, partly by dissection, the liver, with the mass attached to it, was removed from the body. It was then found that the liver itself formed no part of the diseased mass; it was somewhat larger, and more red and dense than natural, but not otherwise altered. The tumor or cyst was connected to its concave surface in the situation of the gall-bladder, and to the left of this towards the horizontal fissure; nothing like

the natural gall-bladder was at all to be found. By dissection the sac of the abscess was separated from the liver without cutting into the tissue of the latter. The vena portæ in the transverse fissure was apparently healthy. The sac thus separated was laid open, and found to consist of several distinct compartments, varying in size from that of a billiard-ball to that of two closed fists, having no mutual communication, but completely separated by strong partitions almost cartilaginous in their texture; all these "loculaments" were filled with purulent matter, having large concrete masses floating in it; altogether there could not have been less than three pounds of pus: nothing like biliary calculi nor bile itself was seen in any of the cells. The internal surface of these cells was rough and granular, and here and there looked as if cracked. The walls of the cyst were increased in thickness by several peritoneal laminae thickened by inflammatory deposition, but in some parts they were so thin that under no very strong pressure they burst and discharged the contents; one of these thinned parts was close to, but not adherent with, the first turn of the duodenum.

REMARKS.—1st: I looked upon the above case as one of inflammation of the liver running on to abscess: this diagnosis turned out to be quite wrong, but considering the symptoms, the local pain and tenderness, the inability to lie on the left side, the vomiting, and the pain behind the right scapula; the enlargement, which not only had all the marks of being continuous with the liver (there being no space into which the fingers could be thrust below the margins of the ribs), but which actually took on the appearance of the liver itself, divided into its two lobes by the suspensory ligament—considering these, along with the local and constitutional signs of the formation of matter—this is perhaps the view which would naturally have suggested itself to most people. The bi-lobed appearance of the tumor was most probably owing to the cyst, from its elasticity, rising up on each side of a line, along which it was compressed by the fibrous, and forming the remains of the umbilical vein stretching from the umbilicus to the liver.

2d.—The situation of the colon, relatively to the tumor, might have given rise to an error of diagnosis of a different kind. If, during examination at any time, this gut had happened to be the seat of flatulent distension, it would have yielded a clear sound on percussion, and this might lead the examiner to refer the disease to the kidney. "We may, moreover," says Dr. Bright, "derive much assistance [in distinguishing between disease of the liver and kidney] from ascertaining by the feel and percussion the exact situation of the hollow intestines; for, although it is true that they suffer great displacement, yet, if we find any of them anterior to the tumor, and lying over it, we may generally infer that the tumor does not form a part of the liver, as it is very improbable that such a growth should arise from the concave surface of the liver as to have any portion of the intestine in that situation.* Now, true it is, that the tumor in the present case did not, strictly speaking, "form a part of the liver," but it was attached to, if it did not "arise from the concave surface" of that organ; and still it had the ascending colon in such a position as to have easily allowed its yielding a clear sound on percussion.

3d. The circumstance of the sac being divided into so many non communicating chambers, only one of which was punctured by the trocar, of course accounts for the small quantity of matter discharged in proportion to the size of the diseased mass, and the small degree in which the tumor subsided after the operation.

4th. This case affords a caution against rough manipulation of such tumors in the abdomen, by squeezing or pressing them; several portions of the sac were so thin as to give way under examination after death: and the same might have happened during life. A similar inference is drawn by Dr. Bright, from a case related by him in his "Observations on Abdominal Tumors," &c. in the 11th No. of the Guy's Hosp. Reports.

5th. Notwithstanding some points of resemblance between the present case and one of "enormously dis-

* Observations on Abdominal Tumors, &c. in Guy's Hospital Reports, April 1839.

tended gall-bladder," detailed by Dr. Babington, in the Guy's Hospital Reports for April 1842,—in that case as in this there was no appearance of bile, and there were also septa in the interior, which, however, do not seem to have divided the sac into distinct compartments. I incline to the opinion that the cyst here was a new adventitious formation (perhaps of a hydatidical origin), which in its progress either involved the gall-bladder in its growth, so that it could not be recognised, or caused it to become atrophied and entirely to disappear. Some cases of cartilaginous cysts attached to the liver are given by Dr. Bond, in his "Clinical Contributions from Addenbrooke's Hospital, Cambridge," in the Med. Chir. Rev., for Jan. 1839; and another "Curious Case of Encysted Tumor," attached to the same organ, will be found in the same journal, for January 1841, p. 230.

CASE II. — Exanthematous typhus—Congestion, softening, and rupture of spleen.

This case occurred in the Northern Infirmary, Inverness, while I was house-surgeon there.

Edward Macqueen, æt. 50, admitted April 15th, 1841, after four days' illness, with the symptoms of fever; great lassitude; dingy face; pulse 100, full; tongue moist, but very foul; skin hot, headache, &c. The breathing heavy and oppressed, but no cough nor pain in the chest.—An emetic, followed by a purgative draught.

16th.—Principal symptom is the heavy respiration; no rattles in chest.—Mixture of Nit. Potass. Vin. Antim. et Vin. Ipecac.

17th.—Languid; pulse 86, small; respiration as before.—Blister over sternum.

18th.—Pulse last evening became very weak, when he was begun with Sulph. Quinæ, gr. j. every three hours. He has still the loaded heavy breathing, and now the typhoid exanthematous eruption is out on the skin; tongue dry and brown, and countenance more dingy: there are some watery vesicles over left tibia.

19th.—About 9 o'clock yesterday evening, on account of the state of his breathing, he was cupped between the scapulae to ℥viij., and had Decoct. Senegæ, with Carb. Ammon. The

blood almost oozed out through the skin before applying the scarificator. The breathing to-day is as heavy as ever; pulse 70.—Ordered wine ℥ss. every two hours, and full doses of camphor.

20th.—No better; wine ℥viij. every 24 hours.

22d.—Seems better; tongue softer; pulse 84

23d.—At 10 A.M. the pulse was fuller, and the tongue cleaner and moist; he made no particular complaint, but the peculiar heavy respiration still present. At noon the nurse reported that he had tried, a few minutes before, to get out of bed, that he had fainted, and was now dying. On going to him, I found that he evidently was so; he was gasping and pulseless, but still able to speak a few words. Ether, with Sp. Lavand. C. and Sp. Ammon. Arom. was administered, seconded by hot nuga, but ineffectually, and about 2 P.M. he died.

The body was examined on the 25th, at 1 P.M.

Head.—No morbid appearance; no congestion nor effusion.

Thorax.—Lungs anteriorly quite bloodless and spongy; posteriorly congested and frothy. A few slender pleural adhesions on left side. Pericardium contained about 3v. of clear limpid serum. Heart flabby and collapsed; tissue very soft, easily torn, and pale; its cavities, as well as the large vessels, quite empty of blood. Inner surface of aorta, at its commencement, studded with steatomatous patches, raised and hard at some points; the artery was not dilated.

Abdomen.—On opening the abdomen, effusion was found in it, which seemed bloody, and on moving the intestines it was found to be pure blood in large quantity. It was then found that the spleen was three or four times its natural size, and so soft that it could scarcely be handled; a large clot of blood was adherent to it, which, on being traced, was discovered to have issued from a lacerated opening in its peritoneal coat, and to be connected with a large coagulum of blood, about half an inch thick, diffused between the peritoneal coat and the proper tissue of the spleen: this layer of coagulum could be traced all round, and turned out from between the spleen proper and its peritoneal tunic. The

texture of the spleen itself was so soft and broken up that it looked like grumous blood. The liver presented the nutmeg degeneration; the gall-bladder contained much yellow bile, with a pearly crystalline substance mixed with it. Kidneys in the early stage of albuminuria. Intestines healthy. Mesenteric glands enlarged, and containing gritty particles.

REMARKS.—There can be no doubt that the rupture of the softened spleen, and the consequent hæmorrhage, were here the cause of death; and that this rupture was itself caused by the effort to get out of bed. It would seem that at first the hæmorrhage took place within, and immediately outside, the parenchyma, or proper tissue of the spleen: this would cause the first faintness and weakness. About two hours afterwards the peritoneal covering gave way, a large quantity of blood was poured into the abdominal cavity, and then death instantly took place.

The peculiar heavy respiration without cough must have depended on pulmonary congestion, which I have no doubt existed to a greater extent during life than appeared after death; as the hæmorrhage which emptied the heart and its vessels of blood would naturally affect those of the lungs in a similar way. The blood of this patient presented a very great degree of what has been termed the "typhus dyscrasis," so that it almost filtered through the skin under the dry cupping-glasses: perhaps the circulation of this vitiated blood in the medulla oblongata may also have had something to do with the condition of the breathing.

Enlargement or softening of the spleen is not, as far as I am aware, a common morbid change in the typhus-fever of this country; certainly extravasation of blood from laceration of this organ is not a common cause of death.

This case farther presented a good example of that softening of the heart so common in fever, for the detection of which by the relative changes of the first and second sound, and its importance as affording an indication for wine and opium, the profession stands indebted to Dr. Stokes, of Dublin.

ON THE
CONSTRUCTION OF THE PLACENTA,
AND THE MODE OF COMMUNICATION
BETWEEN THE MOTHER AND
THE FÆTUS IN UTERO.

By FRANCIS ADAMS, LL.D., Surgeon,
Banchory.

[Continued from p. 159.]

We shall next briefly examine the case of the *rodents*, and, in the present instance, shall take De Graaf for our guide, as he has given the fullest and most accurate description which I have ever seen of the process of fœtification in the rabbit. For the first seven or eight days after impregnation, the ovum draws all its nourishment from the fluid secreted by the uterus, and yet, as De Graaf remarks, it is wonderful to see how full it is of liquor on the seventh day. This juice he shows to be albumen, from its coagulating by heat. During the early stage, then, it is obvious that the ovum, or rudimentary fœtus, draws all its nourishment through the pores of the chorion. The first traces of a placenta are visible on the third day; when it is more fully developed, it is found to consist of two portions, a white and a red, both of which, as De Graaf remarks, are clearly formed within the chorion, and come away along with it. It has evidently no vascular connection with the uterus; this I can affirm from personal observations to be clearly shown towards the end of gestation, although it is not so evident towards the middle of the term, when the placenta is so closely agglutinated to the uterus as might lead a careless inspector to believe that there is a vascular connection. The uterus, too, I may further mention, from my own observation, although it has no prominence on its inner surface corresponding exactly to the *glandula* of the ruminants, is much thickened where the placenta is attached, and its blood-vessels there are much enlarged. De Graaf, and all the other physiologists of that age, arrive at the conclusion that, in the case of the rabbit, the placenta is altogether a portion of the fœtal apparatus, and that at birth there is no rupture of any vascular connection between the

mother and fœtus. Needham adds, that, with some slight differences, the same type of structure prevails in the hare, the shrew, the Indian sow, the mouse, the mole, and the hedge-hog.

In the ewe the construction of the different parts is very similar to that of the cow, as already described; that is to say, the fœtal placentalæ are nearly one hundred in number, and are inserted into as many protuberances on the surface of the uterus, having the appearance of the vinegar-cruets of the ancients, and hence they were called *cotyledones*, or *acetabula*; for it was from observations when shut that the term *cotyledon* in fœtal anatomy took its origin. Now, it is distinctly affirmed, in particular by Steno, but is also assumed and acknowledged as an indisputable fact by several of the others, that between the fœtal and maternal parts there is no vascular connection, and that the nourishment of the fœtus is derived from a milky liquor secreted in the cotyledons of the mother. Here, again, I beg leave to add my own testimony in favour of the statements just quoted from Steno and his contemporaries; for, from actual inspection, I can positively affirm that the parts of the fœtal lamb are not connected to the mother by any vessels, and the fœtus is evidently supported, not by blood but by a thick mucus derived from the cotyledons of the mother.

As stated by Needham, the same mode of construction, with scarcely any perceptible difference, exists in the goat.

In the sow, as Needham and several of the others have correctly remarked, there is no appearance of any distinct placenta or placentalæ from beginning to end of gestation, there being merely a general thickening of the chorion all around, and the connection between the mother and fœtus particularly loose. In the mare, too, the fœtus is supported, for the first half of the period, solely by an alimentary liquor imbibed by the pores of the chorion; and, even in the latter months, the small tubercles which form on it cannot properly be compared to the placentalæ and placentalæ of other animals. The physiologists of the 17th century then came to the conclusion, that in all the inferior orders of mammals there is no vascular connection between the mother

and fœtus; that the latter is nourished by an elementary juice which percolates through the pores of the lining membrane of the uterus, and is imbibed through those of the investing membrane of the fœtal secundines. These intellectual and enlightened inquirers do not fail, likewise, to point out the analogy which here prevails between the oviparous and viviparous animals; but their observations on this head we have neither time nor space to give, and shall proceed to expound their views with regard to the *human placenta*.

I may mention, then, in the first place, that Harvey does not hesitate to declare that he decidedly agrees with Arantius in denying that there is an inosculation between the vessels of the uterus and fœtus, and does not scruple to declare that it was either envy towards Arantius, or undue veneration for the ancients, which made Fabricius controvert this doctrine. He calls the placenta *hepar uterinum* and *mamma uterina*, that is to say, he held it to be analogous to these parts in the adult. It is to be borne in mind that, as stated above, Harvey did not believe in Aselli's discovery of the lacteals, and accordingly he most probably agreed with the ancients in holding the liver to be the great organ of sanguification. One can readily see, then, what led him to compare the placenta to the liver. His comparison of it to the *mammæ*, of course implies that he held it to be an organ for preparing an alimentary fluid for the fœtus. Caspar, Bartholinus, and Wharton, held very decidedly and distinctly opinions in the main coinciding with those of Harvey. Wharton in particular expresses himself with great precision on this subject, contending that the vessels of the fœtus terminate in the placenta, and those of the uterus in that portion of it which is in contact with the placenta; that there is no inosculation of vessels between them, nor any rupture of the uterine vessels at the separation of the placenta. He further holds that it is a nutritious fluid like the albumen of an egg, and not blood, which is attracted from the uterus by the placenta (*Adenographia*, Sec. 35)*. Reyner de Graaf, with

* Ruysch expresses himself in language particularly strong and precise to the same effect, namely, that no blood-vessels pass from the

great ability and force of argument, contends in like manner that there is no vascular connection between the uterus and the placenta, and that the latter organ is an appendage of the chorion. Among other facts which he adduces in proof of this position he calls attention to the circumstance that in extra uterine pregnancy a placenta is not wanting, as it certainly would be if it were not a portion of the foetal apparatus. He holds that the vessels of the placenta suck in a nutritious fluid resembling milk from the mother, in the same manner as the meseraic veins absorb chyle from the intestine in the adult. He further compares the extremities of the umbilical vessels to the roots of trees, and decidedly maintains that at the expulsion of the secundines there is no rupture of any vascular connection (De Mulier, Org. 15). The same theory is defended and expounded by Drelincourt, Swammerdam, Needham, and the other physiologists of the 17th century, without one dissentient voice, as far as I am aware, and including in their number the great father of microscopical anatomy, Malpighi. I could have wished to give Malpighi's description of the placenta entire in this place, but it is too long for my limits; and, standing by itself, it would not be readily understood by those who are unacquainted with the latinity of that age. I must content myself, therefore, with giving a short abstract of his views.

He sets out with admitting the difficulty which he found in describing the uterine parts connected with gestation, but says he will give the result of his own observations *after repeated dissections of women who had died immediately after delivery, or about the seventh month of pregnancy*. After giving a general description of the enlarged structure of the uterus, and more especially of its sinuses, he states, that, on the separation of the chorion and placenta there are discovered "certain pellicles which, during gestation, adhered to the inner surface of the uterus, but several of which are attached to the chorion and placenta:" he adds, "they are soft, mucous, and

uterus to the placenta, but merely a juice percolated through the glandular body of the uterus, and that the foetus forms its own blood, from which the placenta, in a great measure at least, derives its growth. (Clerici et Haugel. Bibl. Anat.) l. 565.

easily torn." (These pellicles, by the way, are evidently the decidua of the Hunters, to which so much importance has been attached by them and their followers.) The placenta itself he describes as consisting of a contexture of umbilical vessels, supported by a substance peculiar to itself. He says, that, as the cotyledons (of the ruminants) are possessed of a peculiar structure, which gives support to their vessels, and serves the purpose of a sieve or strainer to them, so in like manner the placenta, which is, as it were, an aggregate of cotyledons, namely, of parts which enter the vaginulae of the uterus, is composed of a congeries of the umbilical vessels. He concludes his description by saying that the surface of the placenta by which it is attached to the uterus is unequal, consisting of appendices, which enter the sinuses and cavities of the uterus, like cotyledons. He concludes his treatise with stating that the placenta absorbs a juice secreted by the uterine vessels.* It thus appears that the first person who described the placenta with the aid of the microscope found it to consist entirely of ramification of the foetal vessels along with a peculiar structure for giving them support. Malpighi, therefore, entirely concurs with his contemporaries in holding the placenta to be a portion of the foetal appendages. I cannot leave this part of my subject without giving the opinion of that ingenious physiologist, Mayor, as delivered by him, in his celebrated treatise, "De Respiratione Foetus," &c. He says: "As the lacteal vessels deriving their origin from the membranes of the intestines receive a nutritious juice, as it were, by a process of straining through their membranes, and convey it to the mass of the blood, so also in the egg, and in other conceptions, it is to be supposed that a nutritious juice, properly concocted, reaches the mouths of the umbilical vessels only by percolation through these membranes."

And here I would beg leave to call the attention of the reader to remark the evidence which these extracts cursorily given furnish that the physiologists of the 17th century had very distinct ideas regarding secretion and absorption through membranes—that

* De Utero et Viviparorum ovib. Dissectatio.

is to say, of the processes now denominated *endosmose* and *exosmose*; that they did not hold that the lymphatics are the only absorbents in the animal frame: and further, that they were aware that these absorbent vessels, whether sanguineous or lymphatic, do not terminate by patulous orifices on the free surface of membranes. Setting out, then, from these accurate premises, it is not so much to be wondered at that these eminent men arrived at such correct conclusions on the subject now on hand, more especially considering that they took an enlarged view of the whole, beginning with the more simple modes of structure, and ascending to the more complex. What these conclusions were, I shall briefly recapitulate before concluding the present section.

They held, then, that, in all the orders of mammals, the fœtus is nourished by an alimentary juice secreted from the blood of its mother, and not by blood itself;—that in the earlier stage of gestation this liquor is absorbed through the pores of the chorion, or external envelope of the ovum;—that in the lower orders of the class this mode of conveying the nourishment to the fœtus continues to the end of the process,—as, for example, in the sow; while in others, as the mare, it prevails during the first five or six months;—that all the higher orders have placenta, either solitary, or divided into a greater or smaller number of separate masses;—that these placenta and placental are altogether portions of the fœtal apparatus, and are mere appendages to the chorion, within a fold of which they are enclosed;—that the maternal structures subservient to the nourishment of the fœtus are entirely separate from the placenta and the rest of the fœtal secundinae, and consequently that the fœtal and maternal parts are not united together by any vascular connection.

Such were the tenets of our forefathers in the profession 200 years ago; and, most assuredly, I think, all must admit that if these, their opinions, are not true, they bear, at least, the semblance of truth, and are in conformity with what is acknowledged as such in all the departments of natural science. Here we seem to see developed a principle of which every

department of the microcosm and the macrocosm furnishes parallel examples, namely, simplicity in the general plan and variety in the particular application of it. Take, as an example of the former, the construction of the respiratory organ in the whole class of mammals, and the planetary motions throughout our system of the other, and the same diversified uniformity will be discovered in both. In short, we no where find in nature anything anomalous; there is no object throughout all its works which stands by itself, is regulated by peculiar laws, or is constructed upon a particular model.

It thus appears that the opinions held by the illustrious physiologists of the 17th century seem to possess the genuine stamp of truth, whether tried by the direct evidence of the facts upon which they are founded, or by the general tests of what is acknowledged to be truth in other sciences. But perhaps it will be objected that, if these opinions had been really true and well-founded, they ought to have stood the test of time, and not have yielded, as we shall presently see, to the prevalence of a different hypothesis. But, to this objection I would reply, that, although I in so far agree with the Roman philosopher, that, "*opiniōrum commenta delet dies, Naturæ judicia conformat.*" I must protest that it is only the long, the very long lapse of time, that can be reasonably recognised as a test of what is true and what is false in scientific hypothesis. Thus, for example, the true system of the universe, as now universally acknowledged, was taught by Philolaus more than 300 years before the Christian era; was received by Aristophanes, and probably by Plato, his contemporaries, but immediately afterwards was rejected by Aristotle, and, after the lapse of some 400 years, by Ptolemy, who propounded a false hypothesis, which superseded the true theory for more than twelve centuries: and when the true system was again espoused by Copernicus, in the beginning of the 16th century, did it meet with a general ready reception? Far the contrary; most of the lights of the learned world, during nearly 100 years, refused to adopt it. Bacon rejected it, George Buchanan thought he had refuted it, Milton hesitated in

deciding whether it be the earth or the sun that moves; Tycho Brahe propounded a new hypothesis, and Galileo, after demonstrating the truth of the Copernican system, recanted, and professed himself to have been in error.*

So difficult is the discovery of truth, and so slow its progress in the world, obstructed as it is by the ignorance, the contending interests, and the prejudices of mankind, that I have indulged in these general reflections in order to prevent the reader from too hastily drawing the conclusion that the opinions which we have just expounded cannot have been well founded, otherwise, as we shall presently see, would not they have been lost sight of for a time, and superseded by a different hypothesis. As it was, however, from the time of Harvey to the end of the 17th century,—that is to say, during more than 50 years, they constituted the acknowledged creed of the profession on this subject.† In the succeeding century, however, as we shall soon see, they did not long remain unchallenged.

[To be continued.]

GASEOUS EMANATIONS—THE LIVING AND THE DEAD.

It is evident that it is a matter of paramount importance that the atmosphere—the first and last food of man and animals—should be breathed in a pure and uncontaminated condition. It is, therefore, unwise, unjust, and impolitic to expose the majority of our population in towns to the constant influence of *gaseous compounds*, whose exact composition has as yet eluded chemical research, but of whose *immediate effects* on the human frame evidence enough has been produced to set incredulity at defiance. Emanations from the dead, escaping in a pure and concentrated form, have caused the *immediate loss of life*, and the compound that can instantly extinguish life, must, when diluted by the surrounding atmosphere, give rise to slow poisoning in a greater or less degree as circumstances more or less favourable or unfavourable are in operation.—*From G. A. Walker's Third Lecture on the Metropolitan Grave-yards.*

* The following references relative to the ancient authorities who advocated the true system of the universe may be interesting to the reader. Diogenes Laertius, in *Vita Philolac.*; Cicero, *Acad. Quest. IV.*; Plutarchus, *De Facie in Orbe Luna*; Archimedes, *Arenarius*. I need not give references to the modern authorities.

† I may mention in proof of this statement, that, in the great anatomical work of Cleve and Marget, published at Geneva in 1699, there is not a single author who disputes the truth of the theory of De Graaf and Malpighi.

THE SCOTCH EPIDEMIC FEVER OF 1843-4.

By JOHN RICHARD WARDELL, M.D. Ed.

Late President of the Royal Physical and Hunterian Medical Societies, Edinburgh; &c. &c.

[Continued from page 111.]

4thly. *The Sequela*.—Sequels of fever of the continued form are not frequent occurrences, and, when observed, are seldom in persons of hitherto robust health and unbroken constitution. Individuals in advanced life—those who have previously had visceral disease, and thus a proneness left in certain organs to the re-establishment of morbid action, or where the vital powers have long laboured under some powerfully depressing agent—are circumstances chiefly giving rise to post-febrile affections. In those instances of fever in which, during their course, there has been an inflammatory complication of some organ, such structural changes may have taken place, so that its functions cannot be regained simultaneously with the cessation of the idiopathic fever, and thus, from such impairment of its action, certain anomalous conditions be instituted in the system so as to constitute disease. This particularly applies to the hepatic and renal viscera. The circulatory function being so affected, as it is, in fever, most especially in the intermittent type, congestions in the parenchymatous viscera are very liable to occur; hence the spleen in that form frequently becomes considerably enlarged; and, as previously insisted, the distemper in question presenting some characteristics of the intermittent nature, it might have been supposed, as was the case, that this organ would often be increased in size. The congestion of the spleen, however, has previously been adverted to, and considered as a complication, although it not unusually continued in an enlarged state long after the febrile phenomena had subsided, and thus, perhaps, might not improperly have been mentioned here. Such sequels as were most frequently noticed are briefly described below; yet, notwithstanding, a few isolated cases of post-febrile affections, to which no allusion is made, sometimes occurred; but, as these seemed rather dependent upon previous

conditions or adventitious circumstances, than on the distemper, they have been silently passed over.

The first sequela now to be spoken of is one that very commonly succeeded, and was of the most unusual character, viz. a peculiar form of *ophthalmitis*, which often became manifest long after the patient had been dismissed the hospital. At the first these cases were regarded as mere accidental occurrences, not being attributed, as subsequent experience shewed to be the fact, to any causes originating in the disease under which they had recently laboured. None of the usual forms of fever of this country possess such a tendency to produce the affection in question as the seven days' fever; and, with one exception, I am unaware of any epidemic recorded where the same has been observed as a sequel. It is true that the ordinary typhus will sometimes be succeeded by some visceral disorder, but such instances are generally referrible to some pre-existent state, and are mere occasional occurrences. The epidemic referred to in which the same was noticed, was the Dublin fever of 1826; and Dr. Jacob, of that city, published an account of a post-febrile *ophthalmitis* which had been undoubtedly of a very similar description to that now related. All the textures of the eye seemed subject to become diseased; the conjunctiva and sclerotic would be intensely injected, whilst ulceration of the cornea, discolouration of the iris, contraction of the pupil, dimness of the capsule of the crystalline lens, &c., shewed that no particular part of the organ was the special seat of disease. The premonitory symptoms were most generally a state of amaurosis, which preceded the manifest appearances for the space of some days. In Glasgow, Paisley, Dundee, Aberdeen, &c., the same affection was observed. Dr. Douglas Maclagan, at one of the meetings of the Royal Medical Society, said that a few days previously he had been at the Glasgow Eye Infirmary, and that in less an hour twelve or fifteen patients presented themselves with this disease at that institution! From what was seen of the disease by myself in the Edinburgh hospitals, no particular age seemed to confer an immunity, and the time which intervened between the fever and this sequel varied from a

couple of weeks to three months; but the most frequent time was five or six weeks. When they presented themselves at the hospital, the conjunctiva was mostly a good deal injected, and the patient complained often of acute circum-orbital pain. The best account given of this sequela is by the eminent oculist, Dr. Mackenzie, of Glasgow, and published in this journal, Nov. 24th, 1843. In the article referred to, the following facts are given relative to thirty-six cases which came under the author's notice. Twenty-seven were females, and nine males. In eighteen cases the right eye was only affected; in ten the left only; and in eight both eyes together or consecutively. The following were the ages of the patients: viz. below ten, 2; from ten to twenty, 17; from twenty to thirty, 9; from thirty to forty, 2; from forty to fifty, 3; and from fifty to sixty, 3. Mr. Wallace, who wrote on the affection in question, as noticed in the Dublin fever, and quoted by Dr. Mackenzie, says, that, out of forty cases, only four had the disease in the left eye, and only two in both—facts which in a great measure coincide with what has been delivered by the last author. Dr. Mackenzie thinks that the *arteria centralis retinæ* and *vasa longa* first became affected, and that the irritation extended to the ciliaries, &c. It is also stated in the paper now quoted from that the disease bore a very close resemblance to the ordinary catarrho-rheumatic *ophthalmitis*, as well as there being a likeness to syphilitic ophthalmia. Dr. Mackenzie gave it the name of *ophthalmitis post-febrilis*. The following is an example:—

CASE XII.—Peculiar form of *ophthalmitis* coming on during convalescence.

Sarah Ewart, æt. 20; married; a dress-maker; complexion dark; volume of flesh good. Admitted Dec. 11, 1843. States, about two months ago was admitted into the hospital with epidemic fever, which she had in the ordinary form. Did not relapse, and was dismissed at the end of five weeks (Nov. 23rd). Two days after having left the institution, felt the powers of vision of left eye somewhat impaired. On the 28th experienced some pain, and this increased, accompanied with redness and lacrymation, until the day of her re-admission.

To-day (11th) complains of severe sense of pain in left eye, which upon examination shews the conjunctiva to be much inflamed and injected. Has some cough, which she has had for many years; sleeps well; appetite good; skin cool; bowels open; tongue clean; pulse 84. Complains of no other pain.—Temp. Sinistro. app. Hirudines xii. Foveat. ocul. c. Decoct. Papav. somnif; Habeat h. s. bolum cum Pulv. Jalap. Co.

Dec. 12th.—Leeches bled well; bowels opened by bolus three times; little change in the appearance of the eye; perspired a good deal last night; pulse natural.—℞ Zinci Sulph. gr. xii.; T. Opii, ʒss.; Aquæ, ʒviii. solve sit collyrium sæpe utend.; ℞ Sulph. Magnæ. ʒij.; Pulv. Ant. Tart. gr. ij.; Aquæ Fort. lb. ij. Sit. Mist. cap. ʒij. statim et rep. om. secund. horâ donec alvus soluta fuerit.

13th.—Some improvement in the eye this morning; pulse soft, of moderate size and frequency; bowels freely opened without producing any nausea.—Temp. Sinist. Cucurbit. Cruent. et detrar sanguin. ad ʒvi.; app. Sol. Cathart. Cont.

Dec. 14th.—Cupped to ʒvj. with considerable relief to the eye, which is less inflamed; iris possesses perfect power of contraction and relaxation, and does not appear the least affected; pulse natural; had three or four stools; H. Som. sum Bolum c. Calomelanos gr. x. et Pulv. Opii gr. iss.

Dec. 15th.—Eye much the same to-day. Temp. Sinistro emp. Lyttæ Appl.

16th.—Blister has risen; eye much less inflamed. Infra ocul. hirudines xii. applicentur. ℞ Calomelanos gr. xii. Pulv. Opii gr. iij., Cons. Ros. q. s.; divide in pilulas vj. Cap. i. q. q. horâ.

20th.—Gums slightly affected; blister discharges; eye appears much better; pain gone; Pil. Calomel ter quotidie tantum contr.

22d.—Gums still slightly affected; inflammation of eye subsides; no pain; bowels open; pulse regular; Pil. cont. bis die tantum.

24th.—Continues to improve.

26th.—Inflammation of eye nearly gone; no pain; bowels open; tongue and pulse natural.

28th.—Improves.

29th.—Dismissed cured.

REMARKS.—In the above case, as in the majority of instances, the amaurosis preceded other morbid conditions; the redness and lacrymation, however, soon succeeded, developing active inflammation, while the severe pain complained of on the 11th inst. was, it is highly probable, solely attributable to the general congestion of the organ, producing pressure upon the sensitive nerves, and not to mere neuralgia, because this pain was not urgent until the conjunctiva and sclerotics were injected, and as soon as the vascularity was diminished the pain also subsided; this is mentioned, because in some affections of the eye considerable pain may be experienced without any trace of positive inflammation. The iris maintained its natural state, yet, according to the surgeons of the Edinburgh Eye Infirmary, who, of course, saw much more of the disease than was to be witnessed in the hospitals, the iris was very generally affected. The treatment observed in this case was of the antiphlogistic order; Dr. Mackenzie placed much reliance upon depletion and mercurials, and where the pupil became implicated he uniformly applied belladonna: that surgeon also, with much benefit, gave quinine, which Mr. Wallace conceived, during the Dublin epidemic, to possess a specific influence on the disease: this however is very doubtful.

Glandular affection.—The parotid glands, more than any other, during convalescence become diseased; in some few instances, however, the submaxillary and inguinals were enlarged. Persons of a strumous habit, with whom glandular enlargements are most common, are usually the individuals attacked with this sequel; generally speaking, this sequel was not of frequent occurrence.

CASE XIII.—*Affection of the parotid glands.*

William Melrose, æt. 55, admitted Dec. 5th, 1843, was seized with rigors previous to admission, and had taken aperient medicine; on admission complains of head ache, some abdominal tenderness, and severe arthritic pains. Skin hot and dry; pulse 100; much thirst; anorexia; tongue dry, and covered with a whitish yellow fur; some degree of tendency to yellowness; is restless, and cannot sleep; urine co-

plains; bowels open; Habeat. H. Som. Calomel. gr. v., Pulv. Doveri gr. x.

6th.—Feels better; passed a good night; bowels confined; slight yellowness yet continues; statim samat. bol. c. Pulv. Jalap. Co. 3j.

7th.—Is more feverish; urine scanty; intellectual faculties somewhat impaired; no pain in abdomen, nor over region of liver; skin hot and dry; R. Sp. Eth. Nit. 3ss., Potasse Nit. 3i., Laq. Amm. Acet. 3iss., Aquæ, 3vi., Sit. Mist. cap. 3. 4tis. q. q. horâ.

8th.—Symptoms very slightly relieved; urine passed copiously. Medicamenta cont.

11th.—Feels better to-day; less yellowness of surface; bowels open; urine passed freely; skin cool; pulse natural; appetite returning. Continued to improve under a moderate allowance of stimulants up to

20th.—Complains of slight shivering; tongue coated; skin hot; some degree of tenderness and swelling of the right parotid gland, accompanied with some difficulty in protruding the tongue. Cataplasma parti aff. apud. Habeat bolom. c. Calomel. gr. iv., Pulv. Jalap Co. 3-s. Stimulant omissantur.

21st.—Swelling increased in parotid gland, accompanied with greater tenderness—otherwise the same.

22nd.—Swelling of parotid more prominent, and submaxillary glands also affected; pain over these parts increased since yesterday; slight cough; tongue still protruded with difficulty; pulse rather weak. Cataplasma Cont.

23d.—Much the same; no appearance of amendment; swelling considerable.

24th.—Pain and swelling of right side of neck and face advancing, coupled with hardness over the laryngeal cartilage, and some tendency for the same morbid condition to be extended to the left side and left parotid gland.—Cataplas. amp. inter aures impatur. Statim samat Pulv. Jalap. Co. 3j. Cough much the same; pulse not weaker; and except from pain caused by mechanical pressure over air-passages, states himself easier.

25th, *same*.—The swelling is generally greater, accompanied with increased difficulty in the performance of respiratory motion. Slight fluctuation over right parotid gland, in which direction a puncture is made, and from which 3j. of matter are evacuated

of a thickropy consistence. Complaints of cough being more troublesome; countenance somewhat sunk, and expressive of anxiety and uneasiness.

8 o'clock, P.M.—Breathing becoming rapidly worse; intellectual powers perfect; has difficulty in speaking; complains of pain in the chest. These symptoms continued to increase in intensity, and at 10 o'clock, P.M. he gradually sank.

Section cadaveris, 36 hours after death.

Head.—Brain healthy, as also its membranous coverings.

Chest.—Lungs have considerable old pleuritic adhesions; at the apex of the left lobe is a cicatrix communicating with a degenerated tubercular cavity, which is filled with a calcareous deposit. Base of right lung indurated, and passing into the state of grey hepatisation. On pressure a frothy muco-purulent matter is exuded: this applies—but less generally—to left lung.

Heart.—Healthy.

Abdomen.—Viscera healthy.

Neck.—The whole of the right parotid gland is softened, and in some places presents cavities filled with pus, but these do not communicate with each other. Some degeneration has commenced in the concatenate glands, all of which are softened. Left parotid is passing into the same condition, but in a less degree of advancement. Thyroid gland healthy.

CASE XIV.—*Affection of the parotid gland.*

Mary Ogilvie, æt. 17, admitted Nov. 8th, 1843. Complexion light, and of phlegmatic temperament.

Had the epidemic in its ordinary form, and her case might be considered as one of a very mild description. Relapsed on the 14th day after the crisis. Two days after relapse experienced some pain over the right side of the neck, where, upon examination, slight swelling was perceived, the parotid gland appearing a good deal enlarged. Two days subsequent to this, three or four incisions were made after the previous application of fomentations and poultices. Warm applications were again applied with a repetition of the incisions in the course of two days more. Antimonials and

purgatives were given at the same time. The sub-maxillary gland also became affected, and a similar course of treatment pursued, and under which a speedy recovery was the result.

REMARKS.—In the first of these examples it is seen that the inflammation of the parotid was of a very persistent character, and the measures adopted exerted but little if any influence on the progress of the disease. The mechanical obstruction produced in the air-passages added much to the general disturbance, and tended to usher in the fatal result: besides, there are good reasons for believing that the recurrent laryngeals might be so much subjected to pressure as to impair their functions, and thus the action of the larynx be seriously affected. The inspection of the body did not present such morbid appearances as to satisfactorily account for death, none of the vital organs evincing particular structural changes, with the exception of the lungs, and thus the disease was chiefly confined to one lung, and this was far less than what we generally observe in those instances of pneumonia which proceed to a fatal termination. Upon the whole, perhaps, the most correct conclusion would be, that the general prostration incident upon the febrile course, in conjunction with the additional disturbance induced in the air-passages, was the true cause of death. Respecting the girl Ogalvie, it may be remarked that the free incisions which were made in the gland were followed with the best results, and from that operation the turgescence and other inflammatory symptoms quickly subsided.

Sloughing.—In such fevers as assume the adynamic type, where the vital powers are much prostrated, and there has been a long and tedious course of disease,—where the voluntary muscular system is much deteriorated, and the patient long continues in one position,—destruction of the integuments and often of the deeper tissues is not uncommonly witnessed. Again, in those forms of fever in which the disease quickly passes through its stages, and thus the prominent parts not being affected by pressure, sloughing is an uncommon result; and thus it was in the seven days' fever that this sequel was of far less occurrence than in

typhus. In yellow fever bed-sores are said to be very uncommon.

CASE XV.—Sloughing of integuments.

Jean Morrison, æt. 31; a servant: admitted Oct. 9th, 1843.

Her attack was ushered in by the ordinary mode of accession, nor did any unusual symptom present itself until the

12th.—This morning there is slight yellowness of the conjunctiva, and a tawny tinging over the surface generally, especially on the chest and superior extremities.—Hæbeat Ol. Ricini, ʒss. statim.

13th.—Yellowness more distinct; urine scanty, and high coloured; fæces dark and bilious looking; tongue covered with a whitish yellow coat. Slumbers a good deal to-day, but slept little during night. Some pain on pressure over right hypochondrium, extending to epigastrium: pulse 108, small, and rather compressible.—Sina-pismus epigastri applicand. Emp. Lyttæ vertici imponatur. Hæbeat bolus c. Calomelanus, gr. iv. et Pulv. Jalap, ʒj; Vin. Rub. ʒvj; Sp. Communis, ʒiv.

14th.—Feels easier this morning; bowels opened by powder; stools bilious; skin not quite so yellow; less pain in epigastrium; looks more lively; tongue cleaner and moist; pulse 100, of better strength.—Vin. et Spiritus cont.

15th.—Continues better; slept well last night; bowels open; tongue moist; pulse more natural, and of better strength.—Wine and spirits to be continued.

16th.—Continues to improve. Complaints of some tenderness in lower part of back, where, upon examination, a slight circumscribed blush exists over the integuments covering the sacrum.—Ordered to lie upon the side.

17th.—Feels better of herself, but the back is reported to be exceedingly sore.—Cataplasma part aff. app.

18th.—Yellowness nearly gone; tongue cleaner; bowels open; pulse more natural.—Wine and spirits to be omitted.

20th.—Complains of nothing except the sore on the back. On examination, the skin looks much affected, and ready to peel off.—Cataplasma cont.

22d.—The sore on the back discharges some exudating matter; the

skin is broken, dividing at the line of demarcation. — Poultices to be continued. *Lotio Plumbi liij. sæpe utenda.*

25th.—The slough on the back seems almost ready to come away, and the matter continues to be discharged.—*Cataplasma cont.*

28th.—On examining the back a deep concave sore is seen, of about three inches in length and two in breadth, which secretes a large quantity of purulent matter, the slough having come away. In other respects the patient continues to improve.—Ordered steak diet, with a pint of porter daily. Wine to be discontinued.

The case from this time continued to improve.

REMARKS.—The short space of time that this woman was confined to bed previous to the skin becoming inflamed, seems a brief period to cause the affection at issue. I well remember, however, that she was more than usually prostrated, and laid continually on her back in a very helpless state, and was a stout person, of a pale and relaxed appearance. A generous diet, together with the ordinary means of application, and preserving the parts from pressure, produced a gradual though slow cure.

Boils.—These morbid conditions were, according to my own experience, of rare occurrence, and when they did take place were in instances of the yellow complication. A vitiated state of the fluids appeared to constitute the main cause of this sequela. On reference to Case No. X., it will be seen that the patient had several large bullæ, which are there described.

Ulcerative sores.—Sometimes during convalescence the physician's attention was directed to ulcerated sores on the inferior extremities, which for the main part occurred in the aged and infirm, and especially in such persons as had previously had ulcerated legs. In some few cases an ulcerative sore was observed of unusual appearance. The spot at first presented a livid hue, or was an hæmorrhagic-looking patch, and clearly circumscribed. The superjacent cuticle became tense and shining, and at the expiration of three or four days it gave way, when dark coagula were exhibited, and a thin sero-purulent matter began to exude. The few cases of this description were uniformly observed on the inferior

extremities, and varied from the size of a sixpence to that of a shilling-piece. Tonics, an improved diet, together with emollient dressings, soon promoted a cure.

Edematous swelling of the legs.—

All diseases which produce a general declension in the vital powers tend more or less to the production of venous congestions; and this particularly applies to fevers, during the course of which debility forms a prominent feature, and thus the circulatory function often becomes so much impaired as to affect that nice equilibrium which there is in the distribution of the vital fluid during positive health: hence those congestive states which are generally noticed wherever there is considerable corporeal weakness. The greater the distance from the centre of circulation, the more tardy and irregular becomes the blood in its course; and thus it is that the inferior extremities from this cause, as well as that which is superadded by the physical influence of retro pulsion, which has to be overcome by the transmission of fluids in a direction contrary to the laws of gravitation, are rendered œdematous. The extreme vessels then become preternaturally distended, their contractile power diminished, and a tonic fulness is the result, which is followed by an exudation of the aqueous part of the blood into the surrounding cellular tissue. From this, then, it is evident that the greater the debility the more will this morbid process be liable to occur, and thus in those fevers which are of a typhoid character the sequel in question is far more common. In the convalescents from typhus, swelled legs were more frequent than in the seven days' fever, and in the latter those individuals who had previously had a bad and insufficient diet were most usually thus affected. A liberal allowance of food, the moderate use of stimulants, together with friction, bandages, &c. were the best means of remedy.

[To be continued.]

TYPHUS FEVER IN FRANCE.

TYPHUS FEVER appears to be as prevalent and as fatal in many parts of France, as it is in England. It has caused numerous deaths at Nancy and Clermont.

MEDICAL GAZETTE.

FRIDAY, JULY 30, 1847.

WE beg to call the attention of our readers to the correspondence which has taken place between the Council of the Royal College of Surgeons and Sir James Graham, respecting the issuing of a Supplemental Charter, for remedying those defects in the original charter, of which many of the old members of the College have with great reason complained.* These documents have just been published in accordance with an address of the House of Commons. Our space is this week so fully occupied, that we can do no more than direct attention to them. We must therefore reserve our remarks upon the subject of this correspondence for another occasion.

In our last number† we inserted the reply of the Lord Lieutenant of Ireland to the petition of the Irish medical practitioners, respecting the scale of remuneration to medical officers for attendance on fever hospitals and dispensaries. Our readers will find the petition at length, with some remarks upon the injustice of the system which has called it forth, in our number for July 2d.‡ We had certainly anticipated a more favourable consideration of the grievances of which our Irish brethren complain, than they have met with at the hands of Her Majesty's representative. A bare reference to an Act of Parliament, and the vicarious benevolence of the Lords Commissioners of Her Majesty's Treasury, is a very diplomatic way of replying to a document so respectfully and numerously signed. The main object of the

petition was to request his Excellency to intercede with the Government, so that such a remuneration might be awarded to the medical officers of Fever hospitals and Fever districts as would be commensurate with the great value and importance of the duties required of them. The reply shows that the Viceroy declines to interfere in the matter; and it is not at all probable that the Treasury Commissioners will, out of mere charitable feeling, raise the scale of fever-wages above that which is assigned to ordinary mechanics, who can easily earn an equivalent sum by a day's labour without endangering health or life.

It is with regret we find that three eminent professional men have advised the Government in this matter; and have taken upon themselves the responsibility of fixing so paltry a scale of payment. A petition addressed to the Treasury Commissioners would be without effect, so long as the members of the Central Board of Health appeared as the advocates of this *minimum* of wages: and therefore it remains with the petitioners to apply a remedy by taking the matter into their own hands. We have now before us a list of the names of these petitioners, covering nearly six closely-printed columns of an Irish paper; and we may observe that we do not remember to have ever met with a list of professional names at once so numerous and so respectable. We certainly know of no petition in reference to medical grievances, which has ever before received so large an amount of respectable support. With such a list before them, it appears to us extraordinary that the members of the Board of Health do not at once perceive the error which they have committed, and retrace their steps.

The petitioners have only one plain course to take, *i. e.* to decline the medical attendance of Fever hospitals

* Page 214.

† Page 174.

‡ Page 27.

and districts upon such disgracefully low terms. *Le jeu ne vaut pas le chandelle.* This is not a mere question of humanity, or we should be unwilling to give such advice. A contemporary has justly observed that this mode of levying charitable contributions by exacting services from members of the medical profession, and not paying for them, is neither fair nor just. It would have been as reasonable to have expected that the labourers who built the hospitals and infirmaries should, out of charity, have worked at one-fourth of their wages, and that the solicitors, who purchased and conveyed the land, should also have charitably foregone three-fourths of their fees! Would solicitors and labourers be found to act under such circumstances? We believe not. Will medical men be found to accept the stinted remuneration? We fear the answer must be widely different. As in the ancient precedent of Shakespeare's apothecary, "their poverty, but not their will, consents." It is this consideration which has most probably induced the Central Board to fix the wages at so low an amount. The competition which exists in the medical profession will unfortunately always ensure many "labourers," who will work at wages that will just save them from starvation; and this want of unity in feeling, is the evil with which the petitioners will have most strongly to contend. It may be urged that some are ready and willing to accept the low wages; and set the difference which they ought to receive to the account of humanity and charity. This is a very worthy and proper motive to guide a medical practitioner; but the majority of those who are likely to accept such offices must live by their profession,—the Central Board of Health, and the Commissioners of her Majesty's Treasury, are now trying the experiment of making them

starve by it: and those who take up this *gratuitous* attendance on fever-cases (for in no other light can we view it) are perpetuating the evils which are daily tending to the disgrace and degradation of the medical profession in the United Kingdom.

We turn from a consideration of ill-requited, but arduous, services now imposed upon medical men in Ireland, to those which concern the medical attendance of the poor in this country. We received last week a document, giving a fair summary of visits and medicines supplied to Poor-law patients in the Halifax district for a period of thirty-one days, commencing May 20th, and terminating June 19th, 1847. Some gentlemen, occupying seats in Parliament, who are fond of indulging in statistics which deal with only one side of a question, and who, at every debate on the Poor-law, appear as staunch advocates of retrenchment, consider that the sum allowed for medical attendance on the poor, is an indication of reckless extravagance on the part of Government! They look at the total yearly charge, and do not concern themselves with the numbers of sick poor,—the wide extent of Unions, or the visits and mixtures supplied by the medical officers! Nevertheless, facts will thrust themselves forward often to the inconvenience of economical theories; and the question which is now presenting itself to those who regard it in more than one aspect,—whether, in addition to the poor-rate, levied by law on medical practitioners, they shall also be compelled to contribute an additional rate, in the form of *gratuitous medical attendance.* Documents like that forwarded to us by Mr. F. S. Garlick, Medical Officer for the township of Halifax, furnish an answer to the ques-

tion. The figures, as this gentleman observes, are incontestable, and the facts we believe cannot be disputed: they are only confirmatory of the justice of the complaints which have reached us from other parts of the kingdom. The superabundance of medical practitioners enables the Government to adopt successfully towards the profession, a system of passive extortion which is tantamount to the imposition of a heavy additional poor-rate on those who accept an office under the poor-law. We believe that a sacrifice is, in many instances, made in order to keep out men who would be willing to insinuate themselves into medical practice in a district upon any terms: so that the acceptance of office must be often looked upon as a kind of self-imposed fine. How far a Government has a right to profit by such a system we do not at present inquire: but it may suffice to say that the plan is adopted with respect to no other profession. The contract system, with a threat of introducing competitors, is reserved for medical men and the purveyors of provisions!

In noticing Mr. Garlick's statement, we need not enter into all the details: our readers will feel interested only in the results. The Halifax district comprises an area of 990 acres, and a population of 19,881 persons. The visits and medicines supplied to poor-law patients in one month amounted to—

Visits	427
Mixtures	447
Pills	992
Powders	254
Lotions	17
Liniments	2
Ointments	25
Plasters	32

The "remuneration is £80 per annum; that is, 4s. 4½d. per day; or for the attendance and medicines here enumerated, being for a period of 31 days, £6. 15s. 7½d. This scale of remuneration is equivalent to 3½d. for

each visit, the medical officer having also to supply, for this sum, the requisite medicines. These, it will be seen, form an item of considerable magnitude; and the house of the medical officer who distributes medicines in this way, is no longer a private establishment, but a public dispensary. There is enough here to speak for itself; and I am not ashamed to submit this paper to the patient and candid consideration of the Board of Guardians of the Halifax Union.

' Figures are incontestable; and I vouch for the accuracy of this document in every particular.

"(Signed) FRED. SMITH GARLICK,
" Medical Officer for the Town-
ship of Halifax."

We need scarcely ask medical readers, whether our remarks are not fully justified by the clear summary which is here so candidly furnished by Mr. Garlick. We think that the Medical Officers of other unions would do the profession some service by publishing occasionally a month's result of their practice. No written arguments could show so strongly as documents of this description the necessity for some addition to the present scale of remuneration.

Our readers will find in another part of this number * a letter which throws a light upon the new duties and responsibilities attached to those who enter the Army medical service. They are expected to take upon themselves an office which has been hitherto entrusted to the regimental farrier—i. e. of superintending the branding of deserters! The stamping of the letter "D" by a branding-iron has been found insufficient for military purposes; and the New Zealand plan of tattooing by acupuncture has been substituted for it. The order goes somewhat further than this; for we are told that the "medical officer will be held responsible that the execution

of the sentence is effectually performed, the letter 'D' being indelibly impressed on the skin." As our correspondent remarks, this process of tattooing has now become a *medical* duty; for we do not see how a surgeon can assume a responsibility of this kind without practically acquiring a full knowledge of "the art and mystery" of making these indelible marks on the skin. A man would hardly be required to superintend the practice of what another understood better than himself; and therefore the scheme may be considered as opening a new view of military surgical practice, and imposing additional duties, in the way of teaching, upon those who are Professors of Military Surgery! As a surgeon, before entering the army, is required to cup under the eye of an experienced cupper, so may he be required hereafter to produce a certificate from a professor that he is well versed in the art of tattooing! Seriously speaking, however, there does not appear to us to be any reason for throwing a degrading responsibility of this kind upon an army surgeon. In the infliction of corporal punishment, the culprit's safety may render his presence necessary; but no such plea can be urged in respect to the marking of deserters. If, therefore, it be considered proper to retain a practice which partakes strongly of the customs of savage nations, we think it would be advisable to lose no time in negotiating with the New Zealand Company for the temporary importation of HEKI, or any of his professional tattooers, in order that we may have the benefit of their experience in adopting at once the most easy, expeditious, and least painful method of performing this operation.*

* In reference to this "Circular Memorandum," our French contemporary *L'Union Médicale* observes—"Nous ne savons pas quelle impression cette circulaire a faite sur les méde-

As the subject of fees is attracting some attention in the profession, we think it here advisable to announce that the fees and expenses allowed to professional men under the New County Courts' Act, have been fixed by the judges at 7s. 6d. per day, with travelling expenses at the rate of 6d. per mile one way. The 86th section of the Act renders attendance compulsory. By this section it is

"Provided that every person on whom any summons to attend as a witness shall have been served, either personally or in such other manner as shall be directed by the general rules or practice of the courts, and to whom at any time payment or a tender of payment of his expenses shall have been made on such scale of allowance as shall be from time to time settled by the general rules or general practice of the court, and who shall refuse or neglect, without sufficient cause, to appear or to produce any books, papers, or writings required by such summons to be produced, and also every person present in court who shall refuse to give evidence, shall forfeit and pay such fine as the judges shall set on him, and the whole or any part of such fine, in the discretion of the judge, after deducting the costs, shall be applicable towards indemnifying the party injured by such refusal or neglect, and the remainder thereof shall form part of the general fund of the court in which the fine was imposed.

The amount of remuneration is small; but it is fixed with equal fairness for all professional men. The great object of the Act has been to mete out justice speedily and cheaply among a class of litigants who can ill afford to pay the expenses which would be allowed in the Superior Courts.

cins de l'armée Anglaise: nous ignorons s'ils se soumettront à cette mesure révoltante, mais nous assurons avec confiance qu'il n'est en France aucun médecin qui voudût avilir la dignité de son ministère par une aussi odieuse opération." 15 Juillet 1847.

ALTHOUGH the general health of the metropolis, as it is indicated by the Registrar General's weekly table, creates no cause for alarm, it is with regret we perceive that the deaths from *Typhus fever* are progressively on the increase, and that the greater number of its victims are among those who are in the prime of life:—The deaths during the last five weeks have been as follows:—

June 19	52
" 26	58
July 3	64
" 10	52
" 17	64—287

These numbers may not appear very large in a population of nearly two millions; but the average deaths from this disease at this season of the year, extending over a period of five years, have not exceeded *thirty*: hence, it will be seen, the mortality has increased nearly one hundred per cent.! This increase may arise from one of two causes; either that the disease has assumed a more aggravated character, or that its attacks are more numerous; probably both causes are at the present time in operation. For each death, assuming the disease to be of a more severe character, we shall not be far out in estimating that there are at least from ten to twelve attacks, and that from 600 to 1000 of the population are, at any one time, labouring under it. Dr. Casper's recent researches, obtained from a comparison of 3000 deaths, have proved that this fever is most prevalent and fatal in autumn, so that in the undrained and unsewered condition of many parts of this metropolis, we can only anticipate an increase of deaths, irrespective of the importation of cases from Ireland. It may be well to notice here the ages at which the deaths occurred: and making due allowance for the difference in the

numbers living, the mortality appears to preponderate at the adult period of life:—

	Under 15.	15 to 60.	Above 60.
June 19	13	24	15
" 26	17	28	12
July 3	18	36	7
" 10	19	27	6
" 17	14	46	4
	81	161	44

This makes a total of 286 cases,—the age of one person who died of fever not having been stated in the return. In the absence of sanitary legislation, which, by the wisdom of Parliament, has been postponed for another year, we advise medical practitioners to take every opportunity of enforcing the provisions of the Nuisances and Contagious Diseases Prevention Act, passed in the session of 1846.

Reviews.

A System of Surgery. By J. M. CHELIUS. Translated from the German, and accompanied with additional Notes and Observations. By JOHN F. SOUTH, Professor of Surgery to the Royal College of Surgeons of England, and Surgeon to St. Thomas's Hospital. Parts XIII. XIV. XV. and XVI. London: Renshaw. 1846 and 1847.

THE numbers before us complete the joint work of Professors Chelius and South, and contain, like the fasciculi which preceded them, a vast amount of highly useful and practical matter from the pens of both writers. With the exception of Mr. Samuel Cooper's far-famed and invaluable Dictionary, no work in the English language comprises so large an amount of information relative to the science of "operative medicine" and surgical pathology as does this elaborate compendium; and it furthermore has the advantage of in a great measure presenting to the reader a view of the science as practised in the various countries of Europe at the present time. We cannot, however, avoid remarking that a large amount of valuable surgical information which has of

late years been adduced, both in this country and on the Continent, has not found a place in the first edition of the work. We do not mention this as a reproach either to the author or the translator and editor,—each has performed his task with great fidelity, and evidently with vast labour,—but in the hope that, upon a revision of the work, such omissions may be supplied in succeeding editions.

The principal subjects considered in the 13th and 14th Parts (to which we shall, at present, confine our remarks, reserving the two concluding fasciculi for a subsequent article) are the various forms of dropsy; urinary stone; bronchocele; enlargement of the clitoris and labia; warts; horns; exostosis; osteosarcoma and osteosarcoma; spina ventosa; tubercular disease of bone; fungus of the dura mater and skull-bones; adipose and encysted tumors; ganglions; hydatids; cartilaginous bodies in joints; sarcomatous and lardaceous tumors; medullary fungus; polypi occupying various situations; cancer. Most of these subjects of course admit of great display of erudition and practical knowledge, and they have certainly been done full justice to by our authors. Several of the articles are of great length, and are highly elaborate in their details, especially the section on urinary calculus, which occupies upwards of a hundred and thirty pages, and which would form in itself a very respectable treatise. Out of so huge an amount of matter, and so great a variety of subjects, we can only cull here and there a few passages for the edification of our readers. In doing this, we shall principally confine ourselves to the notes by Professor South, as they now form the newest and most original portion of the work.

Mr. South is one of those surgeons—we fear we must also add, and one of those very few surgeons—who do not hesitate to detail the most unsuccessful cases which have occurred in their own practice, as cautions to their successors. The following is one of several very candid and very important narratives of this description, which, while they enhance the value of the present work, must convince every reader of the annotator's candour and good faith.

“The external branch of the external epi-

gastric artery, generally the largest, is sometimes scarcely observable; whilst, on the contrary, the vessel itself, with its principal branches, passes upwards and inwards, where, on tapping, a dangerous bleeding readily ensues if one or other of them be very large.

“I once, very soon after becoming assistant-surgeon to St. Thomas's Hospital, had the misfortune to puncture the epigastric artery in tapping a dropsy of the belly. I had tapped this patient on the first occasion in the usual place, on the white line, midway between the pubes and navel. Some weeks after, my friend Green tapped him again; and, about a month after, a third tapping was performed by me. Fancying that perhaps the scar would not readily heal if I tapped in the same place again, I passed the lancet into the white line scarcely half an inch below the old scar, and afterwards the blunt canula. As the water flowed, he became very faint, but no more so than I have frequently seen without any ill consequence; and, indeed, wounding of the epigastric artery never crossed my mind, for I felt assured I was far from it; nor was there any bleed with the water, or from the wound afterwards, to lead to suspicion. Wine and brandy were given, and he was put to bed quickly. He gradually sank, and died within twelve or fourteen hours. On examination, the belly was found full of blood—I should think four or five pints; and, on carefully dissecting the wound and its neighbourhood, the epigastric artery was found to have inclined inwards, very soon after its origin from the iliac, and ran up behind the white line through a large part of its extent, between the pubes and navel, so that it was remarkable the vessel had escaped in the first two operations. From this untoward case I learnt a lesson I have never forgotten, and which I would anxiously impress—to wit, that, if tapping be performed safely at one spot, it should be again and again performed in the same place, if the patient required tapping twenty times. I have known another example, very similar to my case, which happened in the private practice of a medical friend, and with the same painful result. I also had another case, in which there was considerable difficulty in drawing off the water at all, as I had tapped with a trocar and open canula, and the intestines fell so upon the edge of the tube that I could only give escape to the fluid by introducing a long elastic gum catheter through the canula into the belly. In this case the water was much tinged with blood; and, on the removal of the catheter and canula, there was a very free discharge of dark-coloured blood from the wound, which alarmed me much, and was stayed with difficulty by pressure on the sides of

the wound. No ill consequences, however, ensued; and, some time after, I tapped her again, without recurrence of this annoyance. Whether correctly or not, I presumed, from the dark colour of the blood, that I had wounded some large veins." (p. 485).

Chelius's conclusions with regard to the operations of tapping and extirpating diseased ovaria afford valuable confirmation to the views advanced by one or two English authors who have lately analysed this subject. He remarks—

"In the critical examination of the various modes of treating encysted dropsy, especially that of the ovarium, the following circumstances must be borne in mind:—that, in all cases in which the disease does not cause great annoyance, any operation is to be considered unallowable, as frequently the tumor, when it has reached a certain bulk, remains stationary, and the patient may live for a long while; but by the puncture there is only short relief, as the fluid generally re-collects so much the quicker the oftener it is punctured. Sometimes life is much prolonged by repeated tapping; but at other times fatal inflammation soon comes on. Only in extremely rare instances does the puncture produce a radical cure. Fortunate results have indeed been published of cutting into and injecting the sac, and the like, but in the greater number of cases the result has been unsuccessful. The same also applies to extirpation, which, however, if the radical cure be undertaken in *degenerated* hypertrophied ovary, when the position and attachments of the swelling are well made out, may be considered as the operation most to be depended on, and its frequent performance with success does away with Boyer's doubt of carrying it into practice. In like manner, in dropsy of the ovary without other degeneration, the operation of opening the wall of the belly with a small cut, drawing out the cyst when emptied, and carefully cutting it off, after putting a ligature around its stem (King, West, Jeaffesson), appears preferable to all the other methods proposed for a radical cure, and is supported by the successful cases published, as well as the fact that such tumors, often even when of great size, contract no adhesions with the peritoneum. On the other hand, it has been objected, that, although this operation, at the first glance, appears safest and easiest, as only a small cut is required, and the bowels are subjected to less serious influences, these advantages may be outweighed by the difficulty of drawing the large mass through a small wound so as to reach and tie its stem; whilst the large cut puts the patient in no greater danger of inflammation than the small one, and has

the advantage of getting at the stem with certainty, and of drawing out the tumor without danger. This objection cannot be assented to, as in dropsy of the ovary, unaccompanied with other degeneration and adhesions, the smaller cut presents indisputable advantages, and, therefore, the advice is good, always to make first a small cut between the navel and the pubes, so as to ascertain if there be any adhesions." (pp. 489-90).

It appears, from numerous facts collected in the notes, that, although it is held by some that the patient has a chance of recovery, without the risk of an operation, by the cyst bursting of itself, and the discharged fluid being absorbed from the general cavity of the peritoneum, such cases rarely have a favourable issue. It is proved, that in the generality of instances, besides the danger of collapse and acute peritoneal inflammation shortly after the occurrence of the rupture, reaccumulation of the fluid most frequently takes place. This may occur several times, and the patient ultimately recover, as in a case cited from Camus, of a woman eighty-five years old, in whom bursting of the cyst, followed by absorption and reaccumulation of the fluid, occurred twice. The cyst burst a third time, and the patient recovered. In other cases the process becomes far more trying to the patient's constitution, as in the following instance detailed by Mr. South:—

"Dr. Locock informs me that he has at present under his care, with Sir Benjamin Brodie, a female, about 50 years of age, in whom the ovarian cyst has burst several times. About a year and a half ago, long before any tumor was discovered, she had about once in six weeks an attack of violent abdominal spasms, of the same nature as those which have since clearly been connected with the bursting of the cyst. These attacks became gradually more frequent—latterly once in three weeks. The first discovery of the tumor was about six or seven months ago—a globular elastic tumor, of the size of an orange; but, previous to this being felt above the pubes, a very distinct elastic tumor was perceived by examination by the vagina. Suddenly spasms came on as before, and the tumor was gone, which led Locock to think it was not an ovarian cyst, as he had previously called it, but only a collection of flatus in the bowel, as great eructations and general abdominal distension always followed the attacks. After several repetitions of the rise of the tumor gradually, the spasms; and the dispersion, it was no-

tised that the tumor became larger and larger each attack. Then Brodie detected, after the dispersion, slight fluctuation in the abdominal cavity, which soon disappeared. The next time it filled, being the size of a shaddock, they punctured it with a very fine trocar, and drew off a few ounces of brown fluid, exactly the same as is usually found in ovarian cysts. After this, firm pressure was tried for a week or two over the tumor, but she could not bear the pain it produced. Since this, the same alternate filling, bursting, spasms, and disappearance, have returned at still shorter intervals, and recently her health has begun to fail." (pp. 491-2).

The following practical hint by the editor should never be lost sight of in cases of hydrocele: its justice might be proved by a multitude of disastrous cases:—

"In old people, simple tapping is the only operation for hydrocele which ought to be performed: the others are very dangerous, on account of the inflammation which may ensue, and, being without power, may run on to gangrene."

Mr. South's experience is greatly in favour of the now generally approved mode of attempting the radical cure of hydrocele by iodine injection. He observes—

"The injection of tincture of iodine diluted with water, I am convinced, by repeatedly practising it for some years, is the most effectual and least painful to the patient. Velpeau has the credit of introducing the practice; but I am informed by medical friends who have been in India, that it has long been practised there, and, if my recollection be not treacherous, without drawing the injection off again. And this mode I have adopted, making use of a very fine trocar and canula, drawing off the water, and injecting an ounce of fluid containing two drachms of tincture of iodine and six drachms of water, and then immediately withdrawing the canula, to which the wound always clings very tightly, as the solution is very astringent. The patient most commonly suffers no pain, or at least a very trifling degree; and though on the following day the scrotum is a little reddened and rather firm, yet the patient is not thereby prevented moving about with ease and comfort to himself: indeed, I am informed, that, as soon the injection is made, the person walks away, and requires no further attention. The scrotum, according to my own observation, increases a little, and becomes rather more solid, for three or four days, and then begins to subside, and, in the course of a fortnight, the cure is com-

pleted, without confining the patient more than two or three days, rather as precautionary, than that I believe it really necessary. I have employed this treatment in both large and small hydroceles, merely injecting the quantity mentioned, or a little less, and never either shaking the scrotum about, or distending the cyst by repeated injections, and afterwards drawing it off, as Velpeau practices and recommends. I am quite sure that whoever once employs the iodine injection as I have mentioned, will not treat a hydrocele for the radical cure by any other means." (p. 504).

As we have already observed, the article on urinary calculus is highly excellent and practical, but we think that the authors have been guilty of a very serious, and, in the present state of our knowledge, almost inexcusable omission, in not directing the attention of their readers to the absolute necessity of ascertaining with precision the condition of the renal functions previously to operating for stone. An albuminous state of the urine, which so frequently presents itself in cases where calculi have long existed in the bladder, is always a formidable symptom, and is generally one which deters (or should deter) the surgeon from proceeding either to extract or to crush the stone until he has ascertained whether this morbid state of the secretion can be removed by medical treatment. In many cases such a condition of the urine yields to remedial measures, and the operation is then performed with safety and success; in others the symptom still continues, until the patient's sufferings from the disease, and the rapid failure of his constitutional powers, leave the surgeon no other alternative than that of performing lithotomy at every risk. In some of these cases the patients recover from the operation with scarcely a bad symptom; but in the majority of instances they die, either from secondary hæmorrhage or from inflammation of the sub-peritoneal tissues of the pelvis. We are strongly disposed to believe, that, wherever lithotomy is performed upon a patient whose urine is at that time albuminous, in consequence of organic disease of the kidneys, death from the operation is inevitable. The same observation, in all probability, also holds good with regard to lithotomy. There is every reason to believe that in cases of this description, where

the patients recover, the albuminous state of the secretion has arisen not from organic disease of the kidneys, but from intense irritation of the bladder and urinary passages, induced by the presence of the stone. This opinion is supported by the fact, that, subsequently to the operation, the urine of these patients recovers its healthy character. It has been very judiciously suggested that it is not sufficient to be content with testing the urine for albumen in cases of stone: it is also indispensably necessary to ascertain the specific gravity of the fluid (as freed from mucus), and to determine whether its proportion of urea is natural or defective. If the specific gravity of the urine be low, and a considerable deficiency of urea be proved to exist, decided renal mischief may be almost certainly predicated; and the surgeon, abandoning all hope of success from an operation at that period of the disease, will use every endeavour to restore the secretion to nearly its natural condition (a result which may frequently be obtained even in very severe and advanced forms of renal disease): under which circumstances, if the severity of the case imperatively demand it, an operation may be performed, not with safety, but with a less certain prospect of fatal consequences. If the specific gravity of the albuminous urine be comparatively high, and its proportion of urea natural, it may be fairly decided that the kidneys are free from any severe organic disease, or are, at all events, fully capable of performing their functions efficiently, and that, therefore, the presence of albumen in the urine is due to irritation of the urinary passages, which irritation will be removed so soon as the calculus is extracted.

We should be happy to find that the above precautions were generally practised by surgeons throughout Europe, not only in cases of stone, but also in every instance where an important operation has to be performed upon an individual of impaired or suspicious constitution. A few surgeons are fully impressed with the necessity and value of this simple precautionary measure, but it is at present but too rarely practised, and we are confident that multitudes of lives are sacrificed by its neglect. Wherever, in the examina-

tion of the body of a patient who has died from secondary hæmorrhage or internal inflammation subsequently to an operation for the removal of any form of chronic disease, manifest organic lesion of the liver or kidneys is discovered, the bystanders are at liberty to consider that the surgeon who operated was guilty of the most culpable remissness and neglect if he did not employ the greatest care in investigating the condition of those organs previously to having recourse to the knife.

The Prevention and Treatment of Disease in the Potato and other Crops.
By JOHN PARKIN, M.D. &c. 8vo.
pp. 84. W. Wood: London, 1847.

THE potato malady is doubtless a very serious and formidable matter, but it is certainly quite impossible to listen with anything approaching to gravity, to the pretensions upon which some of our medical brethren lay claim to the right of being considered the only legitimate practitioners in the treatment of this epidemic. A few months since we had to review the work of a gentleman of considerable scientific reputation, who based his right to dictate on this subject upon the ground that none but a practical surgeon, deeply versed in pathological inquiries, and daily employed in traversing London from east to west and from north to south, was capable of investigating so intricate a question. We have here, on the other hand, a learned physician who modestly signifies to his readers that—"having devoted a considerable part of his time and attention to the subject of epidemic diseases, since the first invasion of the cholera, in 1832; and having ventured, some years since, to propose a theory in order to account, not only for their production, but, also, for those anomalies which are allowed to belong to all other theories, he naturally brings to this subject an amount of knowledge and experience possessed by few even of his professional brethren": he has therefore no hesitation in undertaking to explain the cause and cure of the epidemic which has so long ravaged the potato districts. We cannot undertake to enter very fully into Dr. Parkin's arguments tending to the conclusion which he has formed that the production of epidemic diseases among

men and animals, and the development of the blights and pestilences which affect the vegetable creation, are alike due to volcanic action. To a philosopher of ordinary capacity, the attainment of a conclusion of this kind would certainly have proved altogether conclusive to the speculator's hopes of being able to procure a remedy for so deeply seated and so vast an evil; in a small way, it is true the learned have furnished us with the means of confronting the elements,—clouds and water-spouts may be dispersed, and gusts of wind may become stilled by the discharge of ordnance: and it is believed that, if the experiment were not too costly, a boisterous sea might be converted into a placid mirror by throwing oil upon its troubled waves. Natural philosophers, too, have learned to conduct the lightning; and we poor physicians have acquired a certain amount of skill in curing one or two forms of eruptive diseases of a minor kind, but none have, until now, attempted to devise a plan for moderating the effects of volcanic eruptions, and of allaying the results of those processes of nature of which earthquakes are the concomitants! This task has been reserved for Dr. Parkin and his converts, the philosophers of the nineteenth century. This gentleman, being fully convinced that the causes of epidemic cholera and of the potato malady are identical, and being further satisfied that charcoal or carbonic acid is "*the antidote*" for the former disease, has written the pamphlet which now lies before us for the purpose of shewing that the application of the same remedies to the potato plant is calculated to neutralize those poisonous emanations, results of volcanic action, to which he believes the unhealthy state of the vegetable to be wholly due. Not having, at present, extended our practice beyond the higher order of the animal creation, we cannot do more than say that the author's idea is quaint, and that the arguments which he has adduced in its support are ingenions. We can therefore only request those of our provincial brethren who have not wholly devoured their kitchen gardens to the cultivation of haricot beans to bear in mind the author's unailing axiom of "*carbonic acid is the antidote.*"

A Digest of the Evidence taken before the Select Committee of the House of Commons on Andover Union; with some Introductory Remarks. By a BARRISTER. 8vo. pp. 195. J. Murray: London, 1843.

Most of our readers probably remember the leading details of the protracted inquiry which was instituted, at the beginning of last year, into certain matters relative to the treatment of the poor in the Andover Union, and into the management of the Union Workhouse of that place. At the close of this investigation, it was decided, by the select Committee, that the treatment of the paupers resident in the workhouse was marked by undue severity; that their dietary was insufficient, and that it was often further diminished by the dishonesty of the master, so much so that some of the inmates of the workhouse were in the habit of eating raw potatoes and grain, and refuse food, which had been thrown to the dogs and fowls, and that even instances occurred in which these unfortunate persons when employed in bone-crushing, ate the gristle and marrow of the bones which they were set to break. The pamphlet before us contains the leading particulars of the evidence adduced in the various stages of this enquiry. The principal facts of the case are chiefly important as affecting the administration of the poor law; but, in many particulars, the investigation contains much that is of interest to the profession as bearing upon the sanitary condition of the poor in union workhouses.

RECIPE FOR MAKING BEEF TEA.

In his recently published "*Thoughts on the Nature and Treatment of Several Severe Diseases of the Human Body.*" Dr. Seymour has given, for the information of his younger friends in the profession, the subjoined recipe for making beef-tea which he "*purchased from the French cook (and a first rate one) of a nobleman.*"

"Take two pounds and a half of lean beef, cut it into small pieces into three pints of water in an earthen pipkin, let this simmer, never boil, until the liquor is condensed to a pint and a half, then strain carefully. The liquor should be transparent, and of the colour of dark sherry wine, and may be drunk warm or cold: it ought to be entirely free from fat or grease."

Correspondence.

CORRESPONDENCE ON THE PROPOSED NEW CHARTER OF THE ROYAL COLLEGE OF SURGEONS.

THE following is the return to an address of the Hon. the House of Commons, dated July 12, 1847, for "a copy of a letter from the President of the College of Surgeons of England to the Secretary of State, written in March, 1846, and of the answer of the Secretary of State to such letter."

W. M. SOMERVILLE.

Whitehall, July 19th.

Royal College of Surgeons of England,
March 16th, 1846.

Sir,—I have the honour to transmit to you a copy of resolutions passed by the Council of this college on the 11th instant, and confirmed on the 14th, relating to an application to Her Majesty for a supplemental charter.

The Council will feel obliged if you will favour them, at as early a period as convenient to you, with your opinion on the propositions, in order that the draught of a charter may be prepared in conformity therewith, should they meet with your approbation.—I am, &c.

SAMUEL COOPER, President.

*The Right Hon. Sir James Graham,
Bart, &c.*

*Copy of Resolutions of the Council of the
Royal College of Surgeons of England,
11th of March, 1846.*

That a petition be presented to Her Majesty praying for a short supplementary charter, enabling this Council, in the first instance, to arrange the two lists of members elected and appointed to the fellowship (under the authority of the charter) on the 11th of December, 1843, and the 26th of August, 1844, so as to place them in the order of seniority according to the dates of their respective diplomas as members. And further to give authority to this Council to admit by ballot, from time to time, to the rank of fellow, without examination, all members of the college of 20 years' standing, on producing to this Council certificates from seven members of the college, three of whom, at least, shall be fellows, that on their own personal knowledge the members to whom the said certificates are granted are men of strict moral integrity and of high professional acquirements as practical surgeons; and that this manner of admission to the fellowship be limited to those who were members of the college on the 14th of September, 1843, the date of the late charter.

That all who were members of the college on the 14th of September, 1843 (the date of the late charter), and who have been or may be admitted fellows, shall take precedence on the chronological list of fellows, according to the date of their diplomas as members.

That those members who shall be admitted to the fellowship without examination, in the manner directed in the proposed supplemental charter, shall pay the same fee as is required by the bye-law (section 3, paragraph 4) to be paid by members when admitted to the fellowship upon examination.

SAMUEL COOPER, President.

Whitehall, March 23, 1846.

Sir,—I have taken into consideration the resolution of the Council of the Royal College of Surgeons of England, relating to an application to Her Majesty for a supplemental charter.

When the great change was made in the constitution of the college, rendering the Council elective by the fellows, it became necessary to constitute forthwith a body of electors, in aid of the gradual process of the introduction of fellows after examination. It appeared to Her Majesty's advisers, that the privilege of selecting members for this purpose might properly be given to the Council, who were accordingly empowered at once to enrol, as fellows, a list of 300 members, who might appear to them most deserving of that distinction. And, to obviate the consequences of any accidental omissions from this first list, this power was continued for twelve months after the date of the charter, which time seemed long enough to allow of the detection and rectification of any such omissions.

The charter provides that, with the exception of those who should be so admitted within the year, no person should be admitted a fellow until he should have passed a special examination, and complied with the other requisites of the charter.

I have heard with great satisfaction that the beneficial effects which were anticipated from holding forth to young men the honour of the fellowship, to be gained by superior attainments, are in a fair way of being realized; and that a great encouragement has been given to those who aim at a high standard of professional education.

It has, of course, not escaped the consideration of the Council that there is room for apprehension lest the consequences of acceding to their present application should have a contrary tendency, and that the value of the fellowship may be proportionably impaired, as the number is increased of those who have been admitted to it.

without giving open proofs of their superior qualifications.

I am not uninformed of the jealousies to which the distinction of classes among the members of the college has given rise, and I feel myself bound to suppose that the Council, having more ample means of information on the subject than I can command, have come to the conclusion that the probability of allaying these feelings by the alteration now suggested by them is worth the risk of the inconvenience to which I have alluded.

Relying, therefore, as I have hitherto found myself fully warranted in doing, on the enlightened zeal of the Council to promote the best interests of the college, I shall not be indisposed to advise Her Majesty to sanction the introduction among the fellows of those members contemplated by the resolution of the Council.

The other parts of the resolution refer to the future order of rank among the fellows.

If this were a mere question of ceremonial precedence, it would be of very secondary importance; but it assumes a very different aspect when viewed in connection with the manner of election into the Council.

It will not be forgotten by the Council that I from the first disapproved of the principle on which that mode of admission was formerly founded. In consequence of my representations, the Council agreed that it should be in some degree modified and rendered less objectionable in the recent charter, by affording a second opportunity for nominating a fellow for election to the Council who had been once passed over; but the Council at that time were unwilling to abandon altogether the principle of nomination in the order of seniority, and I acquiesced in their final resolution, rather than be deprived of the advantage of their concurrence in the other important changes effected by that charter.

The inconvenience which I then anticipated will be greatly increased if I should advise Her Majesty to sanction your proposal of ranking each fellow upon his admission according to the date of his membership, without making any change in the manner of election to the Council. The consequences would be, that, for the next 17 years, none of the young fellows could calculate with any certainty on his chance of election to the Council; and the unlimited introduction of the certificated fellows, which will probably be viewed with jealousy by those who come in upon examination, will become a more palpable grievance, and will be more deeply resented. I understand that the settlement of this question is considered essential for producing the harmony

which the Council hope to restore by the new measure; but, upon the most mature consideration I can give to the subject, I cannot recommend any alteration of the order of precedence among the fellows, unless it be accompanied by a change in the manner of election into the Council.

I do not think it desirable that every fellow should be indiscriminately eligible to that honour, nor do I wish to prescribe the exact conditions of eligibility; but it would appear to me a reasonable proposition that the members of the Council should be chosen exclusively from those who had been fellows for at least 10 years, or fellows and members for at least 25 years. On this question I shall wish to learn the opinion of the Council, when they shall have reconsidered this matter, after being made aware that I look on an alteration of this kind as an indispensable preliminary to a new arrangement of the order of precedence among the fellows.—I have, &c.

J. R. G. GRAHAM.

The President of the Royal College of Surgeons of England, &c.

ARMY MEDICAL SERVICE.—THE BRANDING OF DESERTERS.

SIR,—Assuming that your readers will be generally gratified to hear of an extension of the applicability and usefulness of medical science, I take leave to state that a "circular memorandum" has lately been issued from the Horse Guards respecting the branding of deserters. The document in question announces that "the Commander in Chief has, on the recommendation of a board of influential medical officers (assembled and instructed, I presume, by Sir James M'Grigor, Director-General of the Army Medical Department), to whom the subject has been referred, been pleased to direct that the method of marking with needles should be resorted to throughout the service." His Grace the Commander in Chief further desires that "the operation of marking deserters may henceforth always take place in the hospital under the superintendence of a medical officer, who will be held *responsible* that the execution of the sentence is effectually performed, the letter 'D' being indelibly impressed on the skin."

Branding deserters having become a medical duty, and the operation of "marking" delinquents, a branch of military surgery, it will, I presume, be required of candidates for an appointment in the medical department of the army to acquire a practical proficiency in its operation. At present, I believe, no candidate is admitted into the service until he produces a certificate, from a professor of cupping, that he

has been specially instructed in that branch of surgery.

A similar testimonial may perhaps, by and by, be required from a candidate that he has been taught how to perform the operation of branding according to "the method of marking with needles."

The penalty of branding having been continued, as a corporal punishment in the army, induces me to fear that Government has but little faith in the beneficial influence of the recent attempts to ameliorate the condition of soldiers, and to render the service more desirable.—Yours, &c.

AN EXPECTANT.

Fort Pitt, Chatham.

MEDICAL WITNESSES, AND CORONERS' FEES FOR ANALYSIS.

SIR,—In your leading article of July 16th, you have very ably pleaded the cause of the medical profession, and very clearly shown that, according to the present state of the law, two guineas is the highest fee that the coroner is allowed to give to the physician or surgeon performing the post-mortem examination of a body, and the chemical analysis of the contents of the stomach and intestines, when there is reason to suspect that poison has been administered; and you conceive that some alteration is required in the law respecting these matters.

According to the report (published in your Gazette, July 16th,) of the proceedings at a post-mortem examination at Carlisle, on the 29th May, ult., one physician and three surgeons were occupied with the analysis and attendance at the several sittings of the coroner's jury, on an average, four hours daily for a fortnight. The analysis appears to have been conducted in a very careful and scientific manner, but the fee, two guineas to each person, appears not only ridiculously small, but insulting! Now, sir, allow me to ask, where lies the fault?—A few more particulars, extracted from the above-mentioned report, will, I think, enable us to answer the question. That these four gentlemen "were induced, at the solicitation of the coroner, with a view of furthering the ends of justice, in the most simple and effective, yet least expensive mode, to undertake the aforesaid engrossing and responsible duties, rather than that the materials should be sent to a distance by a special messenger, and that a medical chemist should be brought from a distance to the inquest, and, subsequently, to the Assizes, at an outlay by the county, at a most moderate computation, of one hundred pounds sterling," is very plainly stated in the above quotation. It is also equally clear that they undertook all these onerous and responsible duties, not because they were by law compelled to do

so, but voluntarily—deliberately—and avowedly—because they would prevent the necessity of sending to a distance for a medical chemist: in short, they step out of their own proper province as physicians and surgeons, to undertake the duties of a practical chemist, and then, in a memorial addressed to the magistrates, they state what they are pleased to term their grievances and losses; complain of the inadequacy of the coroner's fee, and, like the proprietors of some cheap ready-money establishment, declare their willingness to accept ten guineas each,—that is to say, less than half the sum which, probably, would have been the charge of a practical chemist.

Now I should like to know what these gentlemen would say of any chemist, or druggist, who presumed to interfere with their practice as physicians or surgeons. We have daily complaints of chemists and druggists dabbling with physic and surgery, and much talk of medical reform, and medical registrations, to prevent all such interference; but, if legally authorized physicians and surgeons will thus meddle with matters properly belonging to the chemist, ought they to complain if only the legal fee of the surgeon was given, and, as no chemist was employed, that the chemist's remuneration was withheld? Or ought they to be surprised that the legislature turns a deaf ear to their complaints, and that all their schemes of medical reform are received with derision by the Commons' House of Parliament? You, Mr. Editor, having taken a totally different view of the subject, and considered it merely as one of those frequent cases of inadequate remuneration of the medical practitioner, may be a little startled at these observations, but if you will condescend, calmly, to reconsider the matter, I think you will allow that, although severe, they are not unjust.—I am, Sir,

Your obedient servant,

July 23, 1847.

* * We recommend our correspondent to study attentively the Medical Witnesses' Act, 6 and 7 William 4th, chapter 89,—especially the sixth section. The coroner is compelled to issue his order, not merely for an analysis, but for an inspection of the body, to a legally qualified medical practitioner; and the latter is bound to obey this order under a penalty. Practical chemists, unless well informed in medicine, are not the best qualified to conduct such investigations. They may be able to give a good opinion on the chemical part of the inquiry, but can they conduct a post-mortem inspection, or distinguish the duodenum from the oesophagus? It is not enough to say that there is arsenic in the stomach in a case of poisoning,—a man ought to know

the cardia from the pylorus—describe its pathological changes, and give an opinion as to how far they are dependent on the action of the poison, or his evidence will be of little value. The whole system requires reformation.

Medical Intelligence.

SELECTION OF FELLOWS AT THE ROYAL COLLEGE OF PHYSICIANS.

THE following gentlemen have been recently elected Fellows of this Institution, viz.:—
 Sir George Magrath, Knight, Plymouth;
 Henry Beaumont Leeson, M.D. Greenwich;
 Thomas Southwood Smith, M.D. Finsbury Square;
 Peter Nugent Kingston, M.D. Carzon Street, May Fair; and John Taylor, M.D.

A NEW CURE FOR CONSUMPTION.

A M. DESCHAMPS has recently addressed a letter to the Academy of Sciences, in which he asserts that he has succeeded in discovering an infallible remedy for disease of the lungs, even when tubercles have formed. He has forwarded his recipe, and sent securities to the value of 70,000 francs (£2800), to be forfeited in case the efficacy of his remedy should not be established by experiment.

LONGEVITY IN INSANITY.

It is alleged that insanity tends to shorten the duration of life, and this is generally true. A remarkable instance of longevity in a lunatic at Gheel, in Belgium, is recorded. This individual died recently at the age of 109 years.

DIFFERENCE IN THE EFFECT OF THE HEATING RAYS OF THE SUN ON GUN-COTTON AND GUNPOWDER.

WHEN the solar rays were thrown by a lens of about seven inches focus and three inches diameter upon a mass of gunpowder, it was instantly inflamed. The temperature required for the ignition of gunpowder is found to be about 575° ; but provided one particle only acquire this temperature, the explosion of the whole is ensured. Gunpowder is a black substance, and thus absorbs the solar rays readily. This experiment gives a good estimate of the large amount of caloric which falls on a given area from a July sun in a single second. The surface of the lens is equal to rather more than seven square inches ($3 \times 3 \times 0.78 = 7.02$), and the collected rays have, under circumstances favourable to absorption, a heating power of 575° of Fahrenheit's thermometer!

A mass of gun-cotton, which was easily exploded by percussion, was dried, pulled out, and then exposed to the rays in the focus of this lens. It became dazzlingly white, but did not explode, although it remained in the focus for ten minutes. When a little charcoal, or other dark absorbent powder, was placed on it, it exploded instantly. Gun-cotton explodes at various temperatures: the specimen here used, tried in a hot mercury-bath, readily exploded at 350° —therefore at 225° below the heat required for the kindling of gunpowder! These apparently paradoxical results, obtained from artificial and solar heat, readily admit of explanation. The fibre of the gun-cotton reflects the greater part of the solar rays, and does not become heated by them. A portion of the rays may also traverse the cotton as the fibre is transparent. The quantity of heat absorbed and retained, is insufficient to raise the temperature of the mass to the exploding degree.

Some other experiments illustrative of this curious property of the solar rays were then performed. The rays, it is well known, traverse thin glass without sensibly raising its temperature. The focus of rays was collected in the centre of a small quantity of ether contained in a thin tube; but, although this liquid boils at a temperature of 98° , its temperature was not in the least degree affected. A piece of amadou fastened on the opposite side of the tube, so that the heating rays of the sun could only reach it after traversing the ether and the two sides of the glass tube, was immediately kindled.

When some powdered charcoal was dropped into ether in which the focus of rays was collected, the liquid boiled immediately, the charcoal absorbing the heat, and transferring it by connection to the transparent ether. An experiment was then made to determine what effect would follow by employing a body naturally transparent, but rendered opaque by mechanical division. A piece of clear glass was finely pulverized, thrown into the ether, and the focus of rays collected on the powder. After a short exposure the ether began to boil at every point where the rays met the powdered glass. Each little particle of glass, taken separately, was transparent, but in the mass there was sufficient opacity to interfere with the passage of the rays, and to accumulate heat.

The solar rays were at the same time cast by reflection from a powerful mirror upon gunpowder and gun-cotton, and the results above described were equally obtained.

EFFECT OF POISONS ON ANIMAL HEAT.

M. DEMARQUAY has proved by a series of experiments on animals, that the heat of the body is diminished by the action of some

poisons, and increased by that of others. The poisonous agents which cause a *diminution* of temperature are the vapour of ether (by inhalation), the cyanide of potassium, corrosive sublimate, arsenic, tartar-emetic, muriate of morphia, and ammonia. These different substances were injected into the stomach, and the observations then made. The poisons which caused an *increase* of temperature were digitalis, belladonna, croton-oil, and strychnia. One poison, tobacco, appeared to have no effect whatever on animal heat.

CASE OF ALLEGED POISONING AT PUTNEY.

AN investigation took place last week at Putney relative to the death of a young lady who was supposed to have died from the effects of narcotic poisoning. She had been attended by Dr. Cormack, who prescribed for her three pills containing half a grain of opium, and half a grain of extract of hyoscyamus. These pills were taken at the interval of an hour between each, on the night before her death. She had also taken a mixture containing twelve drops of solution of muriate of morphia (strength not stated), at an interval of two hours. The probability is, however, that the whole quantity of opium taken did not exceed *a grain*. She had, at the same time, employed externally a liniment containing a drachm and a half of tincture of opium. The deceased, whose age was about 15, was found, about eight hours afterwards, in a state of apparent narcotism, insensible to questions, labouring under great prostration of strength, and imperceptible pulse, (condition of pupils not stated). She died soon afterwards. On inspection, the vessels of the brain were found congested, but there were all the signs of fatal enteritis in the abdomen. Death was ascribed to this cause, and not to the medicine, which was considered to have been in too small a quantity to have produced fatal results; and a verdict was returned accordingly. The inquest was held at the request of Dr. Cormack.

SALE OF MEDICAL DEGREES.

WE give the writer of the following advertisement, taken from the *Times* newspaper, the benefit of a public notice in this journal,—

"MEDICAL DEGREE.—Gentlemen duly qualified as surgeons, London or Dublin apothecaries, or those who have been in practice before the 1st of August, 1815, may obtain the degree of M.D. without the inconvenience of leaving home. For particulars address to Mr. Murray, surgeon, Malt House, Parson's Green, Fulham."

We insert this notice not assuredly with the design of bringing the advertiser

customers, for we have too good an opinion of our readers for that, but with the view of showing that the infamous system of making sham diplomas a subject of bargain and sale, is still continued in this country. The agent in this case calls himself "a surgeon," but we do not find his name in either Directory. In the last number of the *Gazette Médicale*, the editor asserts that every title or degree has its price, and is purchasable in England, and that a certain amount of cash will ensure the admission of the possessor to even the Royal Society of London! The open toleration of these diploma-mongers reflects disgrace upon our law, and it justifies foreigners in imputing a charge of venality against our medical and scientific institutions.

ROYAL COLLEGE OF SURGEONS.

GENTLEMEN admitted Members on Friday, July 23d, 1847:—C. P. Markus, W. H. Aokland, W. J. Blyth, H. Turner, J. L. Holloway, J. C. Evans, C. A. Walters, A. H. Patterson, J. Adolphus, J. H. Buxton, and W. H. Popham.

Admitted on Monday, July 26, 1847:—W. G. McClure, J. L. Catcliffe, W. J. Williams, T. Symson, J. F. Knipe, J. James, E. B. Passmore, W. M. Ogilvie, F. H. Blaxall, R. D. Miles, and W. Braithwaite.

APOTHECARIES' HALL.

NAMES of gentlemen who passed their examination in the science and practice of medicine, and received certificates to practise, on Thursday, July 22d, 1847:—John White Bridgman, and Robert Baker.

OBITUARY.

M. TEXIER.

DIED recently, in Paris, Dr. Texier, Physician to the King's Household, and Chief Surgeon to the National Guard. The deceased was cut off suddenly by an attack of apoplexy in his 53d year. He was the author of several works on medicine and medical botany.

M. WOLOWSKI.

Lately, at Paris, Dr. Wolowski, Chief Physician of the Polish Army in the insurrection of 1831.

THOMAS MICKLEY, ESQ.

On the 24th inst., at Saffron Walden, Thomas Mickley, Esq. surgeon, aged 38.

DR. A. CLARK.

On the 26th inst., in Stanhope Street, Regent's Park, three days after his arrival from the United States. Arthur Clark, Esq. M.D., youngest son of the late John Clark, Esq. formerly of Poole in the county of Dorset.

Selections from Journals.

MEDICAL JURISPRUDENCE.

CASES WHERE IMMEDIATELY FATAL CONSEQUENCES WERE PRODUCED BY BLOWS ON THE HEAD WITH THE FIST. BY J. D. WHARRIE, M.D. HAMILTON.

THE effects which follow a knock-down blow with the fist are in general so trifling, that it may be interesting, in a medico-legal point of view, to add to the list of cases already on record the following, which have fallen under my own observation, and been attended with immediately fatal results. So much does the opinion prevail with the public, of the non-fatality of such an assault, that Dr. Watson, in his *Medico-Legal Treatise on Homicide*, observes:—"In trials for homicide, doubts have been entertained as to the possibility of a blow with the fist having the power to occasion a mortal injury upon the head." This doubt is certainly surprising, considering the frequency of death from the effects of blows on the head during pugilistic engagements; an instance of this kind occurred in a battle between two soldiers in Glasgow.*

CASE 1.—Two carters quarrelled when at work; one of them struck the other a blow with his fist behind the ear, when he fell, and immediately expired. A warrant was granted by the sheriff to inspect the body, which we did twenty-four hours after death. The only external mark of violence was a small scratch behind the left ear, from which a little blood had exuded. When the skull cap was removed, we found a considerable extravasation of blood extending over the upper surface of the brain, and entering between some of its convolutions; there was a little within the ventricles, and at the base of the brain and top of the medulla oblongata; all the other viscera were natural. The prisoner was tried at Glasgow Circuit Court, pleaded guilty to the charge of culpable homicide, and was sentenced to three months' imprisonment.

CASE 2.—A collier at one of the villages in this neighbourhood, when off work, quarrelled with a stranger passing; from words blows followed, and, by the effects of one of these, he was knocked down, and was carried home dead; in the meantime, the unknown assailant made his escape, and was never captured. I was appointed by the sheriff to make a *post-mortem* inspection of the body, and, on examining it externally, found the skin slightly scratched on

the following parts:—the right cheek bone, the nose, the tip of the right shoulder, and over the left collar bone; above the left ear there was a very slight wound of the scalp. On opening the cranium, the vessels on the surface of the brain, and those entering into its convolutions, were observed to be in a very gorged state; in each lateral ventricle there was a quantity of effused blood, and extravasation had taken place at the base of the brain to a large extent, from rupture of the right lateral sinus: the contents of all the other cavities of the body were in a perfectly natural state.

CASE 3.—In the following instance, although the injury was not immediately fatal, yet, from the short time the patient survived, it may not improperly be introduced into the same class; the history of it is shortly this:—A person returning home about ten o'clock at night, with his wife and another female under his protection, was met in the street by a drunken man, who was in-olent, and was immediately knocked down by a blow with the fist over the nose. I was sent for, and found him supported, in a sitting posture, in the street; he was bleeding freely from the nose, and some (blood) had come from a small bruised wound over the occiput; he was faintish, and appeared insensible, which I attributed, in part, to the effects of intoxication; his home was about a mile and a half distant, but he was removed there in a carriage; he became gradually worse, and died within twenty-four hours from the receipt of the blow. There was a *post-mortem* examination of the body ordered by the sheriff, and the following appearances observed:—Externally there was a small contused wound, extending about half an inch down the centre of the nose, but the nasal bones were uninjured; the skin around the eyes was discoloured, and the nostrils marked with blood; on the occiput, towards the left side, there was a small contused wound: on the scalp being dissected off from this part, there was discovered a quantity of extravasated blood, covering a space of four or five inches square; on the skull-cap being sawn through and removed, there was seen a fissure of the occipital bone (corresponding with the extravasation beneath the scalp), which extended four inches upward from near the base of the skull, and was crossed about the middle by another fissure running towards the left temporal bone, with a smaller fracture lower down, nearer the foramen magnum, but there was not the slightest depression. At the site of these injuries, underneath the dura mater, there was fully an ounce of extravasated blood; and over the right hemisphere of the brain, (particularly opposite the temple and ear), there was a quantity of extravasated blood, which

* Vide Monthly Journal for 1842, where the trial of R. Porteous is reported, and remarked on by the Editor.

was estimated to amount to fully 3 oz.; all the other cavities of the body were opened, but nothing unnatural was discovered. The opinion formed from the inspection was, that he had received a blow on the nose, occasioning a severe fall on the back of the head, so as to occasion fracture of the occipital bone, and extravasation of blood within the skull.

[This case was of course clear enough, but, in other instances, it is extremely difficult to prove whether the injury is produced by the direct force of the blow, or by the fall. We think it has yet to be proved that a blow with the fist can fracture the skull of an adult; but there cannot be a doubt that such an injury may produce fatal hæmorrhage within the cranium.—*ED. GAZ.*]

The case was fully investigated; and the great provocation which the assailant received was reported to the Crown Counsel, by whom no proceedings were instituted against him.

Injuries of this description, proving immediately fatal, seem, generally, to be accompanied by extravasation of blood within the skull, accompanied with fracture of the bones. It may also be remembered that, frequently, only very trifling marks of external violence are present on the body, so that in some of these instances it has been attempted to explain the cause of death, by referring it to an apoplectic seizure; but why have recourse to a hypothetical explanation, when proof sufficient is afforded to account for the appearances observed in dissection having been caused by external violence?

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, July 17.

BIRTHS.		DEATHS.		Av. of 5 Sum.
Males....	600	Males....	479	
Females..	583	Females..	465	461
	1183		944	940

DEATHS IN DIFFERENT DISTRICTS.

(24 in number;—Registrars' Districts, 120.
Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James.. (Pop. 301,326)	133
NORTH—St. Marylebone; St. Pancras; Islington; Hackney..... (Pop. 366,303)	175
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London..... (Pop. 374,750)	126
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar..... (Pop. 393,247)	206
SOUTH—St. Saviour; St. Olive; Remondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich..... (Pop. 479,469)	244
Total	944

CAUSES OF DEATH.

ALL CAUSES.....	944	Av. of 5 Sum.
SPECIFIED CAUSES.....	940	935
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases..	220	226
Sporadic Diseases, viz.—		
2. Dropsy, Cancer, &c. of uncertain seat.....	108	108
3. Brain, Spinal Marrow, Nerves, and Senses.....	140	157
4. Lungs and other Organs of Respiration.....	245	226
5. Heart and Bloodvessels.....	32	25
6. Stomach, Liver, and other Organs of Digestion.....	101	94
7. Diseases of the Kidneys, &c.....	8	5
8. Childbirth, Diseases of the Uterus, &c.....	9	10
9. Rheumatism, Diseases of the Bones, Joints, &c.....	8	7
10. Skin, Cellular Tissue, &c.....	1	2
11. Old Age.....	40	50
12. Violence, Privation, Cold, and Intemperance.....	19	20

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox.....	26	Convulsion.....	29
Measles.....	26		
Scarlatina.....	15	Bronchitis.....	28
Whooping-cough..	16	Pneumonia.....	36
Typhus.....	64	Phthisis.....	143
		Dia. of Lungs, &c.....	25
Dropsy.....	15	Teething.....	6
Sudden deaths..	4	Dia. Stomach, &c.....	9
		Dia. of Liver, &c.....	12
Hydrocephalus..	40		
Apoplexy.....	24	Childbirth.....	3
Paralysis.....	23	Dia. of Uterus, &c.....	5

REMARKS.—The total number of deaths was 4 above the summer average.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer.....	29.9
" " Thermometer.....	70.2
Self-registering do. ^a max. 108.5 min. 66.2	
" in the Thames water.....	75.° 66.3

^a From 12 observations daily. ^b Sun.

RAIN, in inches, '41: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 5.3° above the mean of the month.

NOTICES TO CORRESPONDENTS.

The publication of Dr. G. E. Day's Lectures on Chemistry and the Microscope in relation to Practical Medicine, will be speedily commenced.—The Course of Professor Paget will be completed in our next number. The communications of Dr. Soltan, Dr. Madden, and Mr. Grantham, will be inserted next week.

ERRATA in Dr. Adams' paper on the Placenta, No. 1025:—P. 155, c. 2, l. 32, for "subject," read "subjected"; and l. 35, for "deductions," read "descriptions."—P. 156, c. 1, l. 24, for "setting," read "getting."—P. 156, c. 1, l. 5, for "dictating," read "distorting"; and c. 2, l. 7, "amusement," read "improvement."

Lectures.

COURSE OF SURGERY,

Delivered in the years 1846 and 1847,

By BRANSBY B. COOPER, F.R.S.

Surgeon, and Lecturer on Surgery at Guy's Hospital.

LECTURE VII.

TETANUS.

Simulating cramp—Opisthotonos—Emprosthotonos—acute and chronic—traumatic—idiopathic—symptoms.—Period of dissolution—Case I., Case II., Case III., Case IV., Case V., and Case VI.—Exciting causes—Immediate cause of death—Pathology of the disease—Case VII.—Case VIII.—Ether employed—General treatment.

THE subject of this evening's lecture, gentlemen, is as appalling as that which occupied our attention in the last, and, unfortunately for the science of medicine, equally incurable. I am alluding to Tetanus, lock-jaw, or, perhaps more properly, when confined to the jaw only, termed Trismus.

This disease seems to be very similar to cramp, excepting that there is less cessation to the contraction of muscles during a tetanic seizure than in cramp or spasm, in which there are periods of muscular relaxation.

It seems also that the extensor muscles are more prone to this morbid affection than the flexors, so that the head and neck are drawn backwards, producing the condition termed Opisthotonos, although sometimes the body is bent forward, when the disease is designated Emprosthotonos.

There is a difference also as to the degree and extent of contraction, and the comparative severity of symptoms, so that it is divided into its *acute* and *chronic* states.

It sometimes, and indeed generally, arises from wounds. It may, however, originate from constitutional derangement; hence, therefore, it is described as either traumatic or idiopathic tetanus. It is my province more particularly to draw your attention to the disease when arising from wounds; not that I can tell you the kind of wound which seems most likely to produce it,—unless, indeed, I may say, that perhaps punctured wounds seem to be the most frequent exciting cause.

All kinds of injuries, however, — and, indeed, during every period and condition of the part subject to lesion,—are found to

cause this awful disease, although generally prior to suppuration.

The first symptom which is complained of is a sensation of stiffness about the neck, dryness of the fauces, and some change in the voice, but which produces so little impression upon the patient's mind that he generally attributes it to having been exposed to a draught of cold air. The surgeon's fears should at once be awakened by these premonitory symptoms. Take care, however, gentlemen, that you are not led to express your fears aloud, or even to question the person whether he experiences any pain in opening his mouth, as you are so likely, by this inquiry, to raise the suspicions of the patient of his being the subject of lock-jaw,—the name of which disease most persons are familiar with; and they are well aware of its frequent occurrence after injury, as well as of the danger attending it. You may therefore gain your object by merely requesting the patient to show you his tongue.

The next symptom, and which follows in quick succession, is cramp, and, in more complete trismus, the expression of pain and spasm at the lower part of the sternum, evidently referrible to morbid contractions of the diaphragm. A sensation of tightness around the chest soon supervenes. The abdominal muscles become violently contracted, and sometimes those of the limbs,—all the affected muscles becoming as hard as wood, and subject to but very short periods of relaxation. The motions and urine are retained. The patient is sleepless; or if, for a short interval from fatigue and anxiety, a few minutes' sleep give him relief, it will sometimes be found that for that period the muscles become relaxed. The mental faculties are, even to the last, scarcely ever impaired, forming a great distinction between tetanus and hydrophobia. The eye becomes fixed; the alæ of the nose raised,—a natural effect of difficulty in respiration; the lips separate with the corners of the mouth turned up as if in the act of smiling, which, indeed, has led to the denomination of "*risus sardonicus*:"—in fact, a more dreadful aspect than the countenance under these circumstances can scarcely be imagined. These symptoms continue for some time before the action of the heart is altered, although ultimately this organ becomes affected.

The contraction of the muscles is sometimes so severe as to tear them through. Bones are said to have been broken by their action, and even the teeth have yielded to their force. Profuse sweats occasionally come on at the latter periods of the disease, and constipation is generally a concomitant symptom,—probably resulting from the morbid contraction of the sphincter ani.

From their severity, these symptoms, as one would suppose, soon terminate fatally; and, although it sometimes occurs that the dissolution may not take place till the eighteenth day, from the fourth to the sixth is the more common period of existence after tetanic symptoms are developed.

A little girl, nine years of age, was lately admitted into Guy's Hospital under my care, in whom symptoms of tetanus had come on five hours before her admission, and she died within half an hour after she was placed in bed. This child had been the subject of a compound fracture of the arm about a week before, and everything appeared going on as favourably as possible till the morning of her admission, when this acute attack thus rapidly carried her off.

A woman was admitted also under my care, on October 14th, 1836, into the hospital, in consequence of a burn in the arm from falling into the fire in an epileptic fit. The usual applications were had recourse to, and she went on without any peculiarity of symptoms, excepting having had several fits, until the 24th, when symptoms of tetanus came on. The abdominal muscles were in this case unaffected, but the symptoms of trismus were urgent. Opium was the medicine relied on, but it failed to mitigate the severity of her sufferings, and she died on the fifth day.

On June 7th, 1838, F. C. Lomas was admitted into Accident ward, under my care, with severe laceration of the leg. He had been since his birth frequently subject to epileptic fits. The wound by the fifth day set up a suppurative process, and he continued improving both locally and constitutionally until the 25th of June, when tetanic symptoms supervened. Calomel and opium were prescribed, and enemata of turpentine administered, which proved totally ineffectual, and he died about 40 hours after the attack. It is worthy of notice that in both these cases the patients had been the subjects of epilepsy.

My colleague, Mr. Morgan, admitted a patient into Petersham ward, August 4th, 1840, with symptoms of tetanus under which he had laboured for five days. He was treated with colchicum as an internal remedy, and an ointment of veratria was rubbed into the spine. Purging came on the following day to a degree requiring checking by aromatic confection and opium, but the effect seemed beneficial, as he was able to open his mouth better than he had been since his attack. The improvement, however, was but of short duration, for he died on the following day, being the seventh from the commencement of the attack.

On the 5th October, 1839, R. Stanhope, æt. 46, was admitted into Luke's ward with

a compound dislocation of the ankle-joint and fracture of the astragalus, a portion of which bone was removed. Violent constitutional irritation followed, for which the usual remedies were applied, but it was with difficulty subdued, and delirium was a very prominent feature in the case. However, by the 11th, the patient was considered in a much more favourable condition. On that evening tetanic symptoms came on, accompanied with considerable debility, and profuse discharge of foetid pus. Scruple doses of quinine were prescribed to be taken three times a day, and subsequently hydrocyanic acid was administered. Suppuration continued up to the period of his death, which took place upon the third day after his tetanic symptoms had commenced.

In two of these cases it will be observed that suppuration had taken place before the symptoms of tetanus had occurred, and that in the other two it continued up to the period of death; contradictory of the opinion of many surgeons, that tetanus but rarely comes on as the result of wounds, when suppuration has set in.

In private practice, many years ago, I had an opportunity of witnessing symptoms of tetanus resulting from the injection of a hydrocele. The Spanish ambassador of that day had his hydrocele injected by Sir Astley Cooper, with port-wine and water: nothing unusual, as to his expression of pain followed the operation. On the third day, on my daily visit, I was much alarmed by the patient complaining to me of difficulty in opening his mouth, or of raising his head from his pillow, without sitting up in the bed to effect that purpose. Sir A. Cooper being out of town, I immediately called in the late Mr. Cline and Dr. Baillie, and I remember perfectly that their prognosis was unfavourable. Calomel and opium in large doses were the medicines prescribed, with turpentine enemata, and the patient recovered, although he remained in an extreme state of debility for several weeks.

Of the particular source of irritation which induces tetanus, I think it may be said little or nothing is known. It seems, indeed, as if it occurred after every kind, period, and state of injury, and both before and after suppuration had begun; nor is there more known with respect to the peculiar temperament, or age, which induces these symptoms; although, perhaps, it may be said, that it happens more frequently after the age of puberty. Any continued source of local irritation may be considered as likely to produce tetanus, such as a spicula of bone or wood penetrating a nerve, or its partial division. Hence the propriety of searching for the source of irritation, and of its removal whenever it can be detected.

Cases are recorded of successful results from the division of a wounded nerve, and of the removal of splinters of wood.

Obstinate constipation of the bowels, or worms in the alimentary canal, have been considered by some authors as leading to tetanic symptoms; from which opinion probably has arisen the use of turpentine enemata.

When all the above-described symptoms are present, it would seem that there could be but little difficulty in forming a diagnosis, but still the symptoms in hydrophobia, and poisoning by strychnia, are sometimes so closely simulating those of tetanus, that, unless the history of the case has been well investigated, a false opinion might be formed.

Dr. Watson, in his most excellent work on the Practice of Physic, speaks of the similarity between the symptoms of the effects of strychnia, and of those resulting from tetanus.

The cause of death is not more explicable than that of the disease. It has been attributed to suffocation from spasm of the muscles of respiration generally, while others have accounted for the sudden death which so frequently occurs in tetanus by the contraction of the muscles of the glottis only.

Debility has also been looked upon as the cause of death, considering the disease as asthenic; but from what I have experienced, it seems to me that patients die from excess of irritation, as being "worn out." Still, the period is usually so short that it infers that some influence is induced through the nervous system, differing from that condition of irritation produced by protracted suffering.

But it is the pathology of this disease which is still more difficult to comprehend, and the author, in my opinion, who has thrown most light upon the subject is Dr. Marshall Hall, with whom I perfectly agree, in considering it a disease set up in the spinal marrow, and depending upon irritation of the excito-motory system,—constituting that form of disease termed by Dr. Marshall Hall eccentric tetanus, in contra-distinction to that idiopathic form which he terms centric. The absence of cerebral derangement, attended at the same time with a high degree of irritation of the sensitive and motory nerves, seems to be a sufficient proof of the correctness of this view, and should lead, in my opinion, to such treatment as is most likely to act immediately upon the spinal marrow. I considered, therefore, that blisters, setons, opium, and purgatives, promise the best effects.

About ten years ago I admitted a patient into Luke's ward, with acute tetanus, and

whose symptoms, which were of two days' standing, were very urgent. I ordered a blister to be applied to the whole length of the spine, gave him calomel and opium, and a purgative enema. The next morning, about sixteen hours after the blister had been applied, all his symptoms had subsided; he could open his mouth easily, and with feelings of exultation I dictated to my dresser while he wrote out every detail of the case. My triumph was, however, but of short duration, for, on desiring the patient to turn in his bed that we might dress his blister, in making the muscular exertion to change his position he was seized with spasm, and died in an instant. The post-mortem examination in this case threw no light upon the subject, nor should we expect to find any distinct morbid appearances resulting from pure irritation of the spinal marrow, for this disease must be considered to be rather an abnormal increase of function than a change of structure in the affected nerves; but it should not be lost sight of, that congestion, and unnatural dark colour, of the cineritious part of the spinal marrow, has been frequently observed after death from tetanus.

The following interesting case was admitted into Guy's Hospital under my care since I commenced publishing these lectures, but as I tried the effects of ether to ascertain how far its vapour would prove effectual in diminishing the muscular contractions of tetanus, I have thought it advisable to bring the result of the trial before the notice of the profession.

I felt myself justified in trying this remedy (which may be, I fear, considered an experiment), as nothing has hitherto been found to alleviate the symptoms of this disease, notwithstanding the various medicines which have been employed; and I was induced to continue its use to the very last, in consequence of the comfort it appeared constantly to afford to the patient, so as to lead him frequently to ask for an inhalation.

I was also warranted in persisting in the inhalation, for, although it did not relieve the spasms to the extent I had hoped, it certainly diminished the patient's sufferings, and prolonged his life to a period considerably beyond the usual length of time to which patients live under an acute attack of tetanus.

June 1st.—Alfred Beck, æt. 15 years, a strong healthy boy, of light complexion and light hair, resides in the Old Kent Road, and works at a wadding manufactory in that place. Was admitted into Cornelius ward, No. 6, having injured his hand by getting it caught between two cog-wheels, receiving about 20 small punctures on the palmar aspect of the hand and fingers, and some slight abrasions on their dorsal surface. One

larger than the rest is situated on the back of the second phalanx of the middle finger; on the dorsum of the hand there is a semi-lunar wound. The edges of this wound are somewhat ragged, and the upper part of the skin is raised, forming a small flap. The edges of this wound, and that on the middle finger, were brought into apposition with adhesive plaster; the other smaller cuts were not touched, and water-dressing was applied to the hand, which was covered with oiled silk, and supported on a pillow.

When I saw him, six hours after the accident, he complained of some slight pain in the hand. The skin was rather hot; pulse 96; tongue slightly furred; bowels not open since admission.

2d.—Passed a restless night. The hand is swollen and painful; pulse 100; skin hot; tongue slightly furred, but moist; bowels not yet open; has taken no medicine.

3d.—Passed a better night; skin cooler; pulse 80; bowels well opened this morning; suppuration has commenced.

5th.—Complains of no pain; appetite good; bowels open; sleeps well; wound suppurating and granulating healthily.

7th.—Going on well; hand easy: got up to-day.

9th.—Says he feels quite well. The small wounds on the palmar surface of the hand and fingers are quite healed, but the larger ones on the back are granulating, and discharging a good deal of dirty yellowish pus.

10th.—The fingers being slightly bent, were straightened by means of small splinters, and the whole hand supported by a larger one.

11th.—This afternoon he complained of a slight stiffness in the back of the neck, but in other respects appeared quite well.

12th.—10 o'clock, A. M.—The boy complains of pain in the back of the neck, extending down the back. The sterno-mastoids are contracted, and the mouth can only be about half way opened, and when opened the tetanic grin is observed. The abdominal muscles are contracted; the pulse 126, jerking, and slightly irregular. At 11 o'clock, A. M. the abdominal muscles were relaxed, and those of the back of the neck somewhat contracted, the head being bent slightly backwards. Mr. Stocker saw him, and ordered the extract of belladonna, gr. $\frac{1}{4}$ every four hours, and a turpentine emema to be administered immediately, which, however, brought away no feculent matter.

8 o'clock, P. M.—He can now only very slightly open his mouth. The abdomen is hard, and the sterno-mastoids contracted. He complains of the pain in the back being increased since the morning. The pulse is 74, full, soft, and regular; face flushed;

pupils slightly dilated. He has taken four of the belladonna pills, two at intervals of four hours, and two together.

13th, 10 A. M.—Mr. Cooper saw him this morning, and ordered the belladonna (of which he had taken two doses of gr. $\frac{1}{4}$, and four of gr. $\frac{1}{2}$), to be discontinued, and the vapour of ether to be administered per rectum, which was done by placing some in a bladder, which had a pipe attached to it, and surrounding it with hot flannels. Just before the administration the pulse was 86, but as soon as the patient was disturbed it rose to 136, and during the time the ether was being used it sunk to 88, slightly irregular, and rather feeble.

The boy moaned at times, but seemed in no pain. The ether did not appear to produce any effect on the abdominal muscles, those of the jaw, or the sterno-mastoids, were the only ones contracted. The corrugatores supercillii, indeed, which were slightly contracted, relaxed, but this was probably voluntary. About 3ijj. of the ether were given. It could be distinctly smelled in the breath whilst it was being used. A blister was also applied along the spine in the dorsal region, and castor oil 3vj. given.

8 o'clock, P. M.—He now seems pretty comfortable. The bowels have been freely opened since the ether was first used; pulse 68, soft; skin warm and moist. The ether has been twice used since the morning.

14th, 11 o'clock, A. M.—He passed a restless night, but slept at intervals for about three hours towards morning. The ether was from this period inhaled, and whilst taking it the pulse fell from 100 to 88, and became rather feeble; the boy seemed distressed, and the feet got somewhat cold. The mouth can now be but very slightly opened. He had two copious motions this morning.

2 o'clock, P. M.—Mr. Cooper saw him, and ordered port-wine 3ij., beef-tea, and eggs, to be given daily, and the ether to be continued every four hours, and the blistered surface to be dressed with the savine ointment. The ether has no very marked effect, but appears to afford him relief. The wound is suppurating, and healthily granulating at the edges; in the middle a small slough has formed, which seems to be a bit of tendon: it is firmly fixed, and will not come away.

June 15th, 10 A. M.—He had several spasms during the night, some of them rather violent ones: they occurred at intervals of from six to twenty minutes. The ether was administered every four hours, and relieved the spasms much. The skin is warm and moist; pulse 88, soft; the extreme tip of the tongue only can be protruded. The pupils, which yesterday were still rather dilated, have now quite recovered from the effects of the belladonna.

8 P.M.—The spasms are now occurring at short intervals, and do not seem to be very much relieved by the ether, which was used an hour ago. The abdomen is hard; pulse 120, full; skin warm. He has taken a good deal of beef-tea, four eggs, and wine 3vi. to-day.

16th, 10 P.M.—He passed a very bad night, and had several very violent spasms. The ether was administered at short intervals all through the night. The mouth can now be hardly opened. Pulse 126; skin warm and moist.

8 P.M.—Much in the same state. Appears to be a good deal relieved by the ether, but has had several spasms. He passes his water without difficulty: urine acid, unaffected by heat or nitric acid, and, on standing for some hours, deposits a small quantity of lithate of ammonia.

17th, 10 A.M.—He had several severe spasms during the night. At 12 o'clock, tincture of opium 3j. was given to him, which, with the ether, appeared to afford some relief. At half-past 1 he had tincture of opium 3ss., and, after this, slept for about an hour and a half. He inhaled the ether every half hour or twenty minutes, for a few minutes at a time, and dosed during the intervals. A sponge was kept constantly wet with ether, and was applied to the nose. During the night he was able to open his mouth far enough to protrude a good part of the tongue, when spasm of the muscles came on, and it was with great difficulty released from between the teeth, and not before it was severely bitten. The pupils now are contracted; pulse 140, weak; bowels not open.

8 P.M.—He had two very violent spasms, one at 11, the other at 1 o'clock, during which the face became much congested, the breathing laborious, and the heart's action feeble, and artificial respiration was obliged to be resorted to. Had a castor-oil enema at 5 o'clock, which returned without any faeces. The breathing is now spasmodic; pulse 130, weak.

18th, 10 A.M.—The use of the ether was continued during the night. He had no distinct sleep. The slight spasms were very frequent, and he had one or two severe ones, during the continuance of which artificial respiration was employed. The pulse is now 140, weak; mouth almost closed. He perspires a good deal, and is constantly taking the ether.

12 o'clock.—He had a very violent spasm at 11 o'clock, and, after that, the body was drawn to the left side, and the foot of the left leg was extended and inverted. The pulse was, if anything, more weak and rapid; the pupils normal; the breathing spasmodic.

4 P.M.—Since the spasm at 11 o'clock,

the body has become gradually more twisted to the left side, the opisthotonos getting very indistinct. A castor-oil injection was given him, but returned without feculent matter: indeed, the bowels have not been relieved since Monday morning. The breathing has become gradually more spasmodical, and at every second inspiration the left sterno-hyoid is visibly contracted.

At 3 o'clock he had a very severe spasm, from which he never rallied; artificial respiration now failing, the pulse becoming gradually weaker, and the extremities colder. At last, the heart only could be felt, beating at about 40 per minute. In a little time, respiration appeared arrested, the contracted muscles relaxed, and life became extinct. The face quickly assumed a leaden colour after death, and, in the act of dying, the contents of the rectum were discharged. The wound on the dorsum of the hand continued to suppurate and granulate healthily up to the time of his death: the small slough in the centre did not come away.

Examination of the body 21 hours after death.—The extremities were rigid. The cuticle in the dorsal region had been removed by the blister.

The examination was commenced by making an incision along the whole length of the spine down to the laminae of the vertebrae. The muscles in the lumbar were observed to be of a darker colour than those in the dorsal region. On removing the laminae, the veins within the canal were seen much congested with fluid blood. On opening the theca, a considerable quantity of cerebro-spinal fluid escaped, some of which was preserved for examination. The cord was found to be softer in the dorsal than in the cervical region, and the grey matter was much darker than natural.

Head.—When the calvaria and dura mater were removed, several glandulae Pacchionii were observed. The veins on the surface of the brain were much congested. The grey matter was darker than usual. The fluid in the ventricles was slightly opaque. On removing the brain from the base of the skull, the odour of ether was very distinct. There was a good deal of fluid blood in the arteries at the base of the brain. The grey matter of the medulla oblongata was of the same colour as that of the surface of the brain. The cerebro-spinal fluid, which when taken from the theca was perfectly clear, was rendered decidedly more opaque than natural by the application of heat.

Chest.—The lungs were a good deal congested, but were not emphysematous.

Heart.—There was some ecchymosis on the posterior part of the left auricle and ventricle at their junction. There were soft clots in all the cavities of the heart, and

much fluid blood in the pulmonary artery. The mitral valve was somewhat contracted.

Abdomen.—The liver was congested; the bladder much contracted. There was a considerable quantity of feculent matter in the cæcum, and several hard scybalous masses in the colon. In other respects, the viscera were healthy.

Hand.—On dissecting the cutaneous branch of the musculo-spiral nerve, a twig was traced into the wound, which had been divided, was bulbous at the extremity, and congested. No twigs from the ulnar nerve could be traced into the injured part.—[Reported by JAMES H. MORGAN.]

The lower animals seem as subject to the affection as man. Horses are frequently thus attacked after the operation of docking, or from the accidental pricking of the foot in shoeing; and various experiments have been tried at the Veterinary College upon the efficacy of the numerous remedies recommended in this disease, but without any happier results than has attended the investigation in cases in the human subject. Mr. Morgan, in his Lectures on Tetanus, recommends the inoculation of the wourara poison, with a view of producing a perfect relaxation of the muscles, advising, at the same time, that an apparatus should be at hand to keep up respiration artificially, if occasion should require. Such treatment might be worth a trial; and I earnestly believe, that, were Mr. Morgan the subject of the disease, he would put his hypothesis to the test; but I doubt his or any other man's moral courage in recommending it to another.

I have made a rule during my professional career, gentlemen, never to propose to a patient either an operation or a remedy of any kind to which I would not myself submit, were I placed under similar circumstances with the sufferer.

Professor Sewell produced tetanic symptoms in an ass by poisoning him with strychnia; and, having thus caused symptoms at any rate very much simulating tetanus, he then introduced the wourara poison, which in one case seemed as if it had killed the animal; but, by artificial respiration, it was restored, and ultimately recovered.

If there be any truth in homœopathy, strychnia and such like remedies are indicated; but if the principle of "contraria contrariis curantur" is to be adopted, then wourara, opium, and similar drugs, should not be prescribed. After all, counter-irritation in the course of the spine are the means which I believe will prove ultimately efficacious, if any do.

I shall dwell no longer upon medicinal

treatment, as no one remedy can with confidence be recommended in preference to another, although mercury, digitalis, tobacco, musk, oil of turpentine, wourara, opium, and various other medicines, have been most carefully tried. Surgery, I fear, has done as little for the cure of this disease as physic, although there are recorded cases of persons having recovered where the amputation of limbs has been performed after tetanic symptoms had commenced, and where they have yielded upon the division of wounded nerves; but still, these operations have so frequently failed, that, had a true statistical account been kept, I suspect but little more can be said for surgical than for medical treatment, when once the disease is developed in an acute form.

THE BLOOD IN PUERPERAL FEVER.

THE condition of the blood in this disease has been made the subject of an inaugural dissertation by M. Hersent. The following are the conclusions at which he has arrived:

1st. The amount of water is very much increased; there is from the first a considerable diminution of blood-corpuscles; and, finally, there is a great diminution in the amount of albumen.

2d. The violence of the puerperal affection is proportional to the degree of alteration of the blood.

3d. The fibrin is usually not below, and sometimes above, the normal standard, and hence the blood generally coagulates pretty firmly.

4th. The alteration in the blood probably precedes the development of the disease."—*Dr. Day's Report on Chemistry, 1847.*

THE EFFECT OF PROLONGED INTERMENT ON THE BONES.

SOME human bones were discovered at Pantin, in the neighbourhood of Paris. M. Lassaigne attempted to determine their date by comparing them with bones of some soldiers who had been buried in the immediate vicinity in the year 1814.

Unknown skeleton. Bones of 1814.

Water	20.0	20.0
Organic matter	11.0	15.0
Subphosphate of lime	45.1	40.5
Carbonate of lime	21.6	15.8
Sulphate of lime	2.3	—
Traces of oxide of iron	—	8.2

From these analyses it was concluded that the unknown bones were not of so remote a date as was at first supposed."—*Ibid.*

LECTURES ON
NUTRITION, HYPERTROPHY, AND
ATROPHY,

Delivered in the Theatre of the Royal College of Surgeons, May 1847,

By JAMES PAGET, ESQ.
Professor of Anatomy and Surgery to the College.
[Reported by WILLIAM S. KIRKES, M.D.]

LECTURE VI.

Atrophy as manifested in the principal organs and tissues.—Atrophy of muscle—that of voluntary muscle manifested by wasting, or by fatty degeneration—the degeneration may be almost uniform—or, which is more common, only partial—varieties presented by the degenerated fibre—and by the cellular tissue between the fibres—distinction between formations of fat outside, and those within, the fibres.—The most common condition leading to atrophy of muscle is inaction.—course of events in such a case—experiments of Dr. John Reid—suggestion founded thereon for the treatment of paralysed muscles.—Spontaneous atrophy of muscle.—Atrophy of the heart—most commonly manifested by fatty or “granular” degeneration—general and microscopic characters of these two forms of disease.—Cases illustrating the morbid anatomy and fatal termination of “granular degeneration” of the heart.

Atrophy of bone—may show itself in simple wasting—or in fatty degeneration—specimens illustrating the disease in each of these forms—fatty degeneration of bone identical with ordinary mollities ossium—simple softening of bone shown in the rickets of adults—relation between fatty degeneration of bone and rickets of early life.

Fatty degeneration of the liver—reasons for supposing that the liver, in such cases, is not in active function—but that it is in a state of atrophy—relation in which the functions of the liver stand to those of the lungs.

I HAVE, in the next place, to request your attention while I speak particularly of atrophy manifesting itself in some of the principal organs and tissues of the body.

First, of Atrophy of Muscles. The muscles with transversely striated fibres exhibit in the most marked manner the two forms of atrophy—by wasting, and by degeneration into fat. In a wasted muscle—such as one seen, for example, in the limbs of those who are only emaciated—the fibres may

appear almost perfectly healthy, rather paler indeed, and softer, and more disposed to be tortuous than in the natural state; yet with well-marked transverse striæ, and all other their characteristic features. It is an adapted muscle; and, though bearing only indirectly on the point, I show this example of adaptation by diminished muscular growth in the case of a fractured arm, with excessive shortening of the humerus.*

In a muscle atrophied with fatty degeneration, those several forms will, in different stages, be seen of which I spoke briefly in the last lecture. The whole muscle may appear pale, bleached, or of some yellowish or tawny hue, soft and easily torn. But a more frequent appearance in the voluntary muscles is that in which fasciculi in the healthy state, and others in various degrees of degeneration, lie in parallel bands, and give the whole muscle a streaky appearance, with various hues intermediate between the ruddiness of healthy flesh, and the dull, pale, tawny yellow, or yellowish-white, of the complete degeneration. In such a case (and this may appear remarkable) healthy primitive fibres even may lie among those that are degenerated; and of these latter, some, in place of the transverse striæ, present dark minute dots arranged in transverse lines; in others, the whole fibre has a dim granular aspect, with no definite arrangement of the granules; in others, little oil-globules are seen adhering to the interior of the sarcolemma; and in others, such globules are collected more and more abundantly, and to the proportionally greater exclusion of the proper constituents of the fibres.

In all the fibres advanced in the degeneration, the perfect, unaltered appearance of the sarcolemma, and the absence of the nucleus, will be noticed.

In the examination of different examples of fatty degeneration of the voluntary muscles, you may find much diversity in the characters of the tissue between the fibres and fasciculi. In some instances the inter-spaces between the fibres are filled with cellular tissue both more abundant and tougher than that in healthy muscle, so that it may be hard to dissect the fibres for the microscope. With this there may be no unusual quantity of fat; but in other cases the quantity of fat between the fibres is very great, and the fibres themselves may seem empty, or wasted, as if overwhelmed by the fat accumulating around them. In such a case, when the accumulating fat has coalesced with that which before surrounded the whole muscle, it may really be difficult to find where the muscle was; for the whole of what belonged to it, even after its degeneration, may be gone, and in its place there may

* Museum of the College: Phys. Div. No. 42.

remain only an obscure trace, if any, of fibrous arrangement, dependent on the position of the principal partitions of the new fatty tissue.

I cannot yet speak positively in explanation of this diversity in the state of parts between the fibres. But I am nearly sure that the increase and toughness of the cellular tissue (when not the product of organized inflammatory deposit) exists only in atrophied muscles which have had to resist stretching, after the manner of ligaments; as, for example, when their antagonists are not as powerless as themselves; and that the increase of fat is found only when a muscle has been very long atrophied, and has remained completely at rest, and the fibres themselves, after degenerating, are being removed, and giving place to a formation of common adipose tissue which collects in every part that they are leaving, just as it does about shrinking kidneys, cancers of the breast, old diseased joints, and other parts similarly circumstanced.

In either case we must distinguish between these formations of fat outside, and those within, the fibres; they are in no necessary connection with the proper atrophy of the fibres, but appear generally subsequent to it, and when they attain their highest degree they are not to be regarded as degenerations of the muscular tissue; for they are not, in any sense, formed out of it, though they occupy the place from which it was removed.

The condition in which atrophy of the muscles by far most commonly ensues is inaction. Whenever muscles lie long inactive, they either waste or degenerate; and this whether the inactivity depend on paralysis through affection of the nervous centres or fibres, or fixation of the parts they should move, or any other cause. The degenerative process may be so rapid that, in a fortnight, muscles paralysed by hemiplegia may present a manifest change of colour.

Now, the course of events in these cases appears to be, that the want of exercise of the muscle, whether paralysed or fixed at its ends, makes its due nutrition impossible; and the atrophy thus brought about is the cause of the loss of irritability of the muscle, *i. e.* of the loss of its capacity for contracting.

For, the experiments of Dr. John Reid* plainly shew that loss of contractile power in a paralysed muscle is due, directly, to its imperfect nutrition, and only indirectly to the loss of connection with the nervous centres. When he divided the nerves of a frog's hind legs, and left one limb inactive, but gave the muscles of the other frequent exercise by galvanising the lower end of its

nerve, he found (to state the case very briefly) that at the end of two months the exercised muscles retained their weight and texture, and their capacity of contraction, while the inactive ones (though their irritability, it might be said, had not been exhausted), had lost half their bulk, were degenerated in texture, and had also lost some of their power of contracting. In other cases, too, he found the loss of proper texture always ensuing in the inactive state before the power of contraction was lost.

And it is doubtless the same in man. A muscle which, by no fault of its own, but through circumstances external to itself, has been prevented from acting, becomes shortly incapable of acting even when the external obstacles to action are removed. Hence, I think, we may deduce a rule which ought to be acted on in practice. When a person has had hemiplegia, one commonly sees that long after the brain has, to all appearance, recovered its power, or even through all the rest of life, the paralysed limbs remain incapable of action,—as motionless as at the first attack. Now it is not likely that this abiding paralysis is the consequence of any continuing disease of the brain: rather, we must ascribe it to the imperfect condition into which the muscles have fallen during their inaction. So long as the state of the brain makes voluntary action impossible, the muscles are suffering atrophy; then, when the brain recovers, they are not in a state to obey its impulse, they are degenerate; and thus, their inaction continuing, they degenerate more and more, and all remedy becomes impossible. If this be true, Dr. Reid's experiments suggest the remedy. When muscles are paralysed through affection of the nervous system, we ought to give them artificial exercise: they should be often put in action by electricity or otherwise; their action, though thus artificial, will ensure their nutrition; and then, when the nervous system recovers, they may be in a condition ready to act with it.

You will find this suggestion ingeniously supported by my friend Mr. W. F. Barlow, in a paper published by him in the *Lancet*. In one case, in which I could act upon it, the result was encouraging. A little girl, about eight years old, had angular curvatura and complete loss of voluntary movement in the lower extremities. This had existed some weeks, but as I found she had reflex movements, the legs twitching in a very disorderly way as often as the soles were touched, I advised that the limbs should be put in active exercise, for about an hour two or three times a day, by tickling the feet, or in some similar way. The result was, that when, several weeks afterwards, the spinal chord recovered, and she could again direct the effort of the will to the lower limbs, the

* *Edinburgh Monthly Journal of Medical Science*, May 1841.

recovery of strength was speedy and complete; more so, I think, than if, in the paralyzed condition, the muscles had been left to the progress of the atrophy.

The hindered action of muscles is not the only condition from which their atrophy may ensue. They waste, together with all the rest of the body, in most emaciating diseases; as, for example, in phthisis. And, this specimen of an excessively fat mutton chop* shows that they may degenerate into fat, in concert with other tissues, in a general defective nutrition; such as, I believe, is not very uncommon in sheep, but such as I have never seen in man.

But, besides this general fatty degeneration of muscles, we find it sometimes apparently as a primary or spontaneous affection of one or more muscles. Thus I believe it may occur in a voluntary muscle. We find sometimes one of the muscles of an extremity or of the back thoroughly atrophied, while the others are healthy; and no account can be given of its failure. Perhaps its history would have been like that of a case to which Rokitsansky† briefly refers as a spontaneous fatty degeneration of the muscles of the calf with extreme pain. Mr. Mayo‡ has recorded two cases of, apparently spontaneous, atrophy of the muscles of the shoulder, in which, in a few weeks after severe pain, but no other sign of acute inflammation, all the muscles about the shoulder became simply, but exceedingly, atrophied.

It is not unfrequent to find a portion of the lower and posterior part of the recti abdominis muscles in a state of fatty degeneration. I can give no account or explanation of it, more than by saying that I have seen four or five cases in which about as much of the back part of each of these muscles as corresponded with the pyramides in front, was in complete fatty degeneration.

A similar change also is mentioned by Dr. Budd§ and Rokitsansky||, as occurring in the gall-bladder. Something of the kind may also be found in the urinary bladder of old people. But most of all, the fatty degeneration appears both frequent and important in the heart; and, with your leave, I will enter into some detail respecting the atrophy of this organ.

Atrophy of the heart may appear in either wasting or degeneration. Of the former I showed examples in the last lecture, in the heart of a cancerous man, 50 years old, which weighed only five ounces

four drachms; and that of a diabetic woman, 25 years old, which weighed only five ounces one drachm. Both these had deviated from the general rule of enlargement of the heart with advancing years, in adaptation to the diminished quantity of blood, and the general diminution of the body.

In these cases there is a uniform decrease of the heart: its cavities become small, and its walls proportionally thin. In other instances the cavities are dilated, without proportionate thickening, or, it may be, even with thinning of their walls. This may be considered as occurring in cases of such increased obstacle to the circulation as might in other persons, or in other conditions, engender hypertrophy of the heart. Or, more probably, the dilatation is the consequence of wasting in a heart that had once been large and strong.

But I wish to speak particularly of that form of atrophy of the heart which consists in fatty degeneration; and of examples of it which in their early stages might be called "granular degeneration," though later the fatty degeneration may be manifest.

Extreme instances of fatty degeneration of the heart have been long known and well described. The whole, or the greater part of the heart, in such cases, may seem reduced to fat,—the fat which occupies the place of its proper tissue having coalesced with that which lies on its surface, and the degeneration being accompanied by thinning and softening of its walls.

In like manner, the cases have been well known and described, in which fat accumulates in unusual quantity in those parts of the exterior of the heart in which it naturally exists and is found, though often emaciated and very soft, even in the thinnest people; viz. along its transverse furrow, the furrows in which the coronary vessels run, and others. From these positions, the fat dipping more and more deeply may nearly displace the fibres, and lead, it may be, to a secondary degeneration of them.

But these conditions, and their frequent combinations, are too well known to need that I should describe them, or refer particularly to any of the specimens of them, except to this, which is a heart from a sheep.* It exhibits a great accumulation of fat on its surface; its walls are thin, and particularly fatty; and the greater parts of the cavities of the ventricles and of the left auricle are occupied by large lobulated growths of suet-like fat. The weight of the fat here added to the heart is 25 ounces, and it is said that there was besides a large accumulation of fat about the kidneys. But no other history of the case is extant than that

* Prep. 10, Pathological Museum of the College of Surgeons.

† Patholog. Anat. B. 2. S. 348.

‡ Outlines of Human Pathology, 1836, p. 117.

§ Diseases of the Liver, 1845, page 191.

|| Patholog. Anat. B. 2. S. 368.

* College Museum.

the sheep was inactive, and had dyspnoea on exertion.

These cases of extreme fatty degeneration of the heart are much rarer than those of which I have now to speak.

The most common form is that in which you find, on opening the heart, that its tissue is in some degree paler and softer than in the natural state, and lacks that robust firmness which belongs to the vigorous heart. But what is most characteristic is, that you may see, especially just under the endocardium, spots, small blotches, or lines, like undulating transverse bands, of pale, tawny, buff, or ochre-yellow hue: thick set, so as to give at a distant view a mottled appearance. These manifestly depend, not on any deposit among the fasciculi, but on some change of their tissue. For, at their borders, you find these spots are gradually shaded off, and merging into the healthy colour of the heart; and when you examine portions of such spots with the microscope, you never fail to find the fatty degeneration of the fibre. In the least degree of the degeneration, you may see only minute black dots, within the sarcolemma, partially obscuring the proper substance of the fibre: but as these dots grow larger, so their centres grow bright, and they manifest themselves as particles of oil, which, still increasing both in size and number, may, at length, almost completely fill the sarcolemma, or even may, in some degree, distend it. They may be irregularly scattered, or may lie in longitudinal transverse rows; and various appearances, such as it would be tedious to describe, may be produced by the various sizes of the oil particles, and by their lying in different focal distances, so that some may appear like black dots, and others may present the many aspects which, according to their distance, we find in any specimen of minute drops of oil. The main fact is, that in portions—even, taking them altogether, considerable portions—of the heart, the proper muscular tissue is gone, and in its place you have tubes full of fatty matter—therefore powerless, wholly incapable of exercising the proper function of the muscular fibre.

In regard to the pathology of the disease, it is important to remember that it is, from the first, an affection of the fibres themselves; it is not the result of an encroachment of the natural fat of the heart upon them, although it sometimes, yet I think seldom, exists together with increase of the external fat of the heart. Its chief seat—near the inner walls of the heart's cavities, and on the fleshy columns, where is little or no fat in the natural state—would prove this; and the microscopic examination leaves no doubt, for you may not find more than the usual quantity of fat outside the fibres. The

fat is nearly all within them, and the paleness, or complete absence of the nucleus, declares the nature of the case. Neither is it at all necessarily connected with general fatness of the body.

The yellow spotting, or transverse marking of the heart, may exist in the walls of all its cavities at once, or may be found in a much greater degree in one than in the others. My impression is, that it is less common in the auricles than in the ventricles, and that when it exists simultaneously in all, it is less advanced in the auricles. I think, also, that it is more common in the left ventricle than in the right; and in the left ventricle it is commonly most advanced on the smooth upper part of the septum, and in the two large prominent fleshy columns. Indeed, it may exist in these columns alone; and when, in such a case, the rest of the heart remains strong, may account for the occasional occurrence of rupture of the columns; or, as Rokitsansky suggests, by their imperfectly holding the valves, may give rise to murmurs.

The affection I have just described is one of the vast number of discoveries in pathology which we owe to the extraordinary labours of Prof. Rokitsansky, of Vienna; and he has very accurately described it in one of its most interesting aspects, as occurring late in the course, or very near the close, of cases of hypertrophy of the heart. It is common to find enlarged hearts thus diseased; and thus, no doubt, it often is that death comes in. For, for a long time the heart will contend against the increased obstacles to the movement of the blood; and its reserve-power of nutrition will be exercised with continually refreshed force, strengthening it in every part, or especially in that on which the chief stress of difficulty falls: and thus the circulation may for a long time be maintained tolerably. But good general health, and the concurrence of all the conditions of healthy nutrition, are necessary for this growth; and, when they fail, as sooner or later they do through the complication of the disease which may first have affected only the organs of circulation, their growth is no longer possible,—atrophy ensues, and death, through the effects of the obstruction of the circulation, which had been long striven against.

The atrophy thus ensuing may produce mere wasting of the muscular substance of the heart; and hence, perhaps, as already said, the supervention of disproportionate dilatation after healthy hypertrophy of the heart. But I think it more often assumes this state of degeneration; and it does so, not in the heart alone, but in other hypertrophied organs, as in the urinary bladder.

All that I can add to the practical interest of Rokitsansky's description of this dis-

case is, in the fact that the fatty matter is not upon or between the fibres, but in their interior; and that the disease appears to be much more common in hearts of ordinary size than his account would lead one to believe. The yellow spotting is certainly a common affection in the hearts of persons of all ages. Dr. Ormerod has seen it even in those of children. And though it may not be possible yet to assign its characteristic symptoms, yet, when we consider that the fibres in which it exists must be absolutely powerless, it cannot be an unimportant affection, at the least as a complication of other diseases.

But, besides this yellow spotting, Rokitsansky also mentions, but too briefly, another appearance produced by fatty degeneration of hypertrophied and dilated hearts, which has for some time past engaged the attention of both Dr. Ormerod and myself as an exceedingly important affection in hearts which appear not previously or otherwise diseased. It is to this form, since it appears desirable to distinguish it by some name, that I would apply the term of "granular degeneration" of the heart,—indicating thereby both a general granular aspect seen with the naked eye, and the granular appearance which the fibres, when examined with the microscope, derive from the crowds of little oil particles within the sarcolemma.

Let me first state briefly the particulars of three cases of this disease, the terminations of which were so similar that they are probably characteristic examples of the course of events.

I was requested to assist in the examination of the body of a woman, about 60 years old, who was wrongly supposed to have been killed by an overdose of morphia, given for the cure of some spasmodic pain to which she was subject. She had been a healthy person except for these pains, and except that for two or three years she had been growing fat. On the night of her death she took half a grain of acetate of morphia, which was twice as much as she was used to, but it did not produce deep sleep, and there was certain evidence that four hours after taking it she was awake, and talked sensibly with those around her; but, after thus talking, she went to sleep, and three hours afterwards was found dead. She had died in her sleep. On examination, we found nothing whatever to account for death, except this fatty degeneration of the heart.

The next case I observed was in a member of our profession, an intimate friend, 56 years old, whose apparently perfect and robust health, and whose power of resisting cold and most of the ordinary causes of disease, were remarkable. He was, besides, so watchful of his health, that I feel quite

sure he never had a sign of affection of the heart such as he could either feel or in any other way observe. One Friday he began to complain of illness, and Dr. Burrows, who saw him about fifteen hours after, found him suffering with what he anticipated would develop itself as typhus fever; and he observed that his pulse was so labouring, and his breathing so slow and sighing, that he at once apprehended serious mischief at hand. These fears were confirmed by some aggravation of the symptoms next day, for the patient seemed more depressed, though nourishment and stimulants were freely given; but on the Sunday some improvement took place, and he slept soundly for some hours, and awoke so refreshed, that on the Monday morning he took food with appetite, sat up, and talked of leaving his bed and going down stairs; but he had scarcely finished speaking, before he leaned back, and in less than two minutes was dead. His body was most carefully examined by Dr. Ormerod, and the only morbid change of any moment that he could find was the fatty degeneration of the heart. The heart was uniformly diseased in every part; yet the change was such as I think none but a practised eye could have discovered, and nothing but microscopic help could have enabled us to describe or understand.

In the next case, a strong man, between 30 and 40 years old, addicted to very hard drinking, received a slight injury of the head. He paid no attention to it, and continued his work for four days; then, having headache, and feeling ill, he laid up, and left off all strong drink. In three days, signs of delirium tremens commenced, and he was brought to the hospital. In the course of the second day after the beginning of these symptoms, while they were pursuing an ordinary course, he took 140 drops of laudanum, but no beer or spirits, till in the evening, when, the opium seeming to have been sufficiently administered, brandy was given him, and beef-tea. In about two hours he went to sleep, and he remained dozing, and apparently improving in condition, all night. But in the morning a new nurse came to him, who wished to change his bed-linen. For this purpose she took him out of bed, and set him in a chair; but he had hardly been removed before he appeared to be dying, and he died before he could be again placed in bed. In his body, the only changes were fatty degeneration of the heart and of the liver.

Here, then, were three cases of sudden death, all the result of a similar disease of the heart, the existence of which had been completely unsuspected, and in all probability, at least in the second case, had not been attended with any signs that could

have attracted even scrupulous attention. The condition of the heart was alike in all, and very characteristic, though, indeed, to an unpractised eye, it might seem unimportant.

) In hearts thus diseased there is no increase in the quantity of fat on the exterior.

There is no increase in the quantity of fat on the exterior of the heart, and the whole organ has its natural size, shape, and general external appearance; but it feels soft, doughy, inelastic, unresisting, and may be moulded and doubled-up like a heart beginning to decompose long after death: it seems never to have been in the state of *rigor mortis*. These appearances are more manifest when a section is made through the wall of the left ventricle. Then, if the wall be only partly cut through, the rest of it may be very easily torn, as if with separation of fibres that only stick together; and the cut surface of the wall looks, as it were, lobulated and granular, almost like a piece of soft conglomerate gland—an appearance which is yet more striking when observed with a simple lens of about half an inch focus. In colour, it has not on its surface, much less on its section, the full ruddy brown of healthy heart, a colour approaching that of the strong voluntary muscle,—but is, for the most part, of a duller, dirtier, lighter brown, in some parts gradually blending with irregular marks or blotches of a paler fawn colour.

When a portion of the muscular wall (let it be cut however it may) is dissected in the ordinary way, or even very gently, with needles, for the microscope, it is found that all the fibres are broken into short pieces, some twice, some five or six times, as long as they are broad. The broken ends of these short pieces are usually squared, but some are round, or irregular, or cloven, and broken off lower down. The pieces are almost always completely separated, having no appearance of even cohering at their sides, and they lie scattered disorderly.

In some pieces, the transverse striæ are still well seen and undisturbed, appearing quite as in health. In more, they are interrupted or obscured by dark particles, or glistening particles with shady black margins, like minute oil-particles scattered without order in the fibre. Where such particles are few, they appear to lie especially, or only, in contact with the interior of the sarcolemma; but, where more numerous, they appear to occupy every part of the fibre, leaving the transverse striæ discernible only at its margins, or even completely obscuring or replacing them, and making the fibre look like a gland-tube filled with dark granules and larger glistening dark-edged fat particles. Where these particles are very numerous in a fibre, they appear

also generally larger, and more generally glistening and black-edged, like larger oil particles.

There are no oil-drops floating about, no fat-cells, scarcely even any of the minute particles which are seen in the fibres, appear out of them,—the field of the microscope is perfectly clean. No morbid product, cyto-blasts, or others, can be seen as a deposit between the fibres, nor is there any apparent increase of cellular tissue.

As a general rule, the palest parts are most advanced in the disease; but even in microscopic portions some pieces of fibres appear hardly changed, while those all round them are completely granular.

Besides the characters assigned above, these diseased fibres differ from healthy ones, in that there are no nuclei lying among them as among healthy heart fibres, and that they rarely split in filaments, though often obscurely marked longitudinally.

Such is the fatty degeneration of the heart not otherwise diseased—an affection which seems of importance to us all, because it may fatally interfere with the ordinary progress of a case, whether surgical or medical.

Let me add, for caution, that serious as the effects of the disease are, the change of structure may escape any but a very careful, and practised, examiner. For, often, the change is hardly manifest to the eye, though, while it affects the whole heart, it may have destroyed life; it perhaps never proceeds to the yellowness seen in the spots of fatty degeneration which constitutes the first form I described; yet, extreme as the degeneration in these spots may be, it is comparatively unimportant, because existing in only portions of the heart's substance, whereas, generally, this latter form affects the whole heart at once, and almost uniformly.

I do not pretend to trace the clinical history of these affections: I hope it will be done by Dr. Ormerod, who has helped me greatly in investigating their morbid anatomy; I may, however, remind you of the principal character which all these cases seem to present; it is, that they who labour under this disease are fit enough for all the ordinary events of calm and quiet life, but are wholly unable to resist the storm of a sickness, an accident, or an operation. And let it not be said that one learns little in learning too late the existence of an incurable disease; for, beyond doubt, very often the death that has come from such a disease as this has been ascribed to a wrong cause, and has spoiled confidence in good men and their good measures.

Let me pass now to the account of atrophy of bone, which, like that of Muscle, shows

itself in the two forms already often referred to.

The simple wasting, or reduction of size, of a bone with no considerable increase, if any, of its fatty constituents, is a most common change. Examples have been already adduced in connection with the subject of unequal length of the limbs, and with that of the effects of pressure. And the Museum contains so many examples of it,—all, on some ground, possessing interest,—that the difficulty has been to choose among them. The most striking is the skeleton of the hydrocephalic patient from the museum of Mr. Liston; it is the more remarkable, because while all the bones of the trunk and limbs are reduced, by atrophy, to exceeding thinness and lightness, the bones of the cranium are as exceedingly enlarged in adaptation to the enormous volume of their contents.

This skull* has interest because fitted up by Hunter to show the movements of the edentulous lower jaw, as he has described them in his *Natural History of the Teeth*. And it shows the atrophy not only of the alveolar margins, but of every part of the jaws, and even of their palatine parts, and those of the palate bones, which are quite thin and transparent.

A rare specimen of atrophy of the jaw is shown in this case of complete osseous ankylosis of both temporo-maxillary articulations, from Mr. Howship's museum.† Similar atrophy of bone in its extreme state is illustrated by this example of ankylosis of the knee,‡ from the case described by Mr. Thurnam§; for here considerable apertures are formed in the wasted walls of the bone, which were covered in only by the periosteum; the whole thickness of these portions of the walls having been removed in the progress of the atrophy.

Here is a specimen|| in which simple atrophy of the femora led to such fracture as is called spontaneous, being effected by a slight force. The atrophy of these bones occurred coincidentally with extreme emaciation of all the other parts, as well as of the skeleton; an emaciation which was to be ascribed more to starvation, I believe, than any thing. The shafts of the femora are exceedingly small, and their walls are so thin that, although their texture appears healthy, they could not resist the force of the muscles acting on the articular ends. They broke; and, as one may say, in the emergency, fresh formative power was put

forth, and the fracture was united with new bone formed when all the old bone was wasting.

I might greatly multiply examples of such simple wasting atrophy of bones; let these suffice, that I may speak now of fatty degeneration of the bones.

I have already said that it is common, in many atrophied bones, to find an excess of this fatty matter; and I shewed old bones laden with fat as examples of that form of senile atrophy. But it is now to be added, that the bones, like other organs, are liable to a fatty degeneration, which, because of the obscurity of its origin, we must be content to call spontaneous; and this fatty degeneration of the bones is the disease which most English writers have described as *Mollities Ossium*.

The time allotted for the lecture is so nearly spent that I must be content to do little more than invite you to examine the remarkably rich collection of specimens of this disease—fatty degeneration, the English *mollities ossium*—contained in the museum: a collection embracing specimens from nearly all the cases with whose histories we are most familiar.

As a well-marked example of the fatty degeneration, I may shew these bones,*—femora fractured by a slight force, and, in their dried state, light, very greasy, mahogany-brown, and so soft you may crush many parts of them with the fingers. Their excess of fat is evident; but no more of them is known than that they came from an elderly, if not an old man,—an Archbishop of Canterbury.

This specimen is a section of a humerus†, affected, as many other bones of the same person were, with extreme fatty degeneration: and the Catalogue contains, with its description, a reprint of an essay, by Mr. Hunter, which escaped even the careful search of the editor of his works—Mr. Palmer. His essay is entitled, "*Observations on the Case of Mollities Ossium described*," &c., by Mr. Goodwin, in the *London Medical Journal*.‡ It was communicated in a letter to Dr. Simmons, the editor of that journal, and I will quote one passage to show both what was the original appearance of the bones and how completely Mr. Hunter's description confirms the opinion that this *mollities ossium* was really a fatty degeneration of the bones. He says, speaking of this humerus, "The component parts of the bone were totally altered, the structure being very different from other bones, and wholly composed of a new substance, resembling a species of fatty tumor, and giving the appearance of a spongy bone,

* Prep. 8, in the Pathological Museum of the College of Surgeons.

† Prep. 566 in the College Museum.

‡ Prep. 364 in the same Museum.

§ *London Medical Gazette*, vol. xiii. p. 219. October 30th, 1863.

|| From the Museum of St. Bartholomew's Hospital.

* Prep. 480, from the College Museum.

† Prep. 398, College Museum.

‡ Vol. vi. 1785.

deprived of its earth, and soaked in soft fat.”*

Nothing can better express the character of the change, or its similarity to the fatty degenerations of other organs, in all of which we find the proper substance of the part gradually changed for fat, and the whole tissue spoiled, while the size and outer form of the part remain unaltered.

The same characters are shown in the often-quoted case by Mr. Howship, of which specimens are here preserved.† The last of these specimens shows what remained of the upper part of a femur after boiling,—scarce anything besides a great quantity of white crystalline fatty matter.

—It is the same with this femur,‡ lately presented to the museum by Mr. Tamplin, in the examination of which I first obtained the conviction of the nature of the change which constitutes what we call *mollities ossium*. This has the same characters as the specimens already shown, and the medulla of the bone had the bright yellow, pink, and deep crimson hues, which are so striking in many instances of the disease. But the constituents of this apparently peculiar material were, free oil in great quantity,—crystals of margarine free, or enclosed in fat-cells,—a few fat-cells full of oil as in health, but many more, empty, collapsed, and rolled up in strange and deceptive forms. The pink and crimson colours were owing to part of the oil globules, and to the nuclei and granules in the collapsed fat cells being thus coloured; and there was no appearance whatever of an excess of blood in the bone, or any of its contents.

From this examination, therefore, as well as from all the other facts, I concur entirely in Mr. Curling's opinion respecting this disease, as expressed by him in the 20th volume of the *Medico-Chirurgical Transactions*. This§ is a specimen from the case on which he chiefly founded his opinion, and which he has very accurately described. He proposes the name “*Eccentric Atrophy of Bone*” to express one of the principal characters of the disease; and I would have adopted it, but that it seems desirable to class this affection with others to which it bears the closest analogy, by giving it the same generic name—fatty degeneration of bones.

The cases to which I have now referred include the principal examples of the disease observed and recorded in England under the name of *mollities ossium*; and to these I have very little doubt I may add the case described by Mr. Solly in the 27th

volume of the *Medico-Chirurgical Transactions*, for the appearances presented by this femur* are strikingly similar to those in the specimens already referred to, and the material filling its medullary cavity contained abundant fatty matter.

You might ask, then, what is the real *mollities ossium*? or, is there such a disease different from what these specimens show? I could not certainly answer such a question; for I have never seen a specimen which appeared to fulfil in any degree the general notion of *mollities ossium*, as a disease consisting in the removal of the earthy matter of bone and the reduction of any part of the skeleton to its cartilaginous basis. Yet I am loth to disbelieve what some others have written of such an affection. Of this alone I am sure, that these English cases are not such simple softening of bone, but fatty degenerations; and if there be cases specifically different from these, I think they will prove to be some of those to which Rokitanaky refers under the names of *Osteomalacia*, *Malakosteon*, *Knocheneiwerchung*, and *Rachitismus adultorum*. For he gives as a characteristic of the disease that it affects the bones of the trunk, or a part of them, much more often, and more severely, than the bones of the extremities, and occurs especially after child-bed. Now, in the cases which I have endeavoured to illustrate, the extremities, not the trunk, are the chief seats of the disease; and there is no evidence of the fatty degeneration occurring more often after delivery than in any period or condition of life. So that, on the whole, I think we may consider there are two diseases included under the name of *mollities ossium*,—namely, the fatty degeneration which these specimens show, and the simpler softening of bone, or rickets of the adult, to which Rokitanaky's description alludes, and in which the bones are flexible rather than brittle, and appear reduced to their cartilaginous state. I am disposed to think the case recently described by Dr. Bence Jones and Mr. Dalrymple† may be an instance of this latter affection.

[The Professor next endeavoured to show the relation of the fatty degeneration of bones to the rickets of early life, by comparing the change of structure in the skull of a patient,‡ whose case is described by Mr. Solly,§ with the change exhibited in the skulls, and other bones, of ricketty children and animals. And then tracing the changes through which such skulls pass in their progress towards the healthy state,

* Catalogue of the Pathological Museum of the College of Surgeons, vol. ii. page 28.

† Preparations 401-2-3, in the College Museum.

‡ Prep. 403A, College Museum.

§ Prep. 408A, College Museum.

* Prep. 403C, College Museum.

† *Philosophical Transactions*; and *Dublin Journal*, vol. ii. 1846.

‡ Prep. 395, in the College Museum.

§ *Medico-Chirurgical Transactions*, vol. xxvii. page 457.

suggested that some of the strangely thickened, porous, and heavy skulls, preserved without histories in most museums, belonged, in life, to those who had had mollities ossium in one of the forms which had been described.

All this part of the lecture would be unintelligible without the specimens by which it was illustrated: and it is the less necessary to insert it, because much of what was said is embodied in the 2d volume of the Catalogue of the Pathological Museum of the College, just published, pp. 16 to 25.]

The last example of fatty degeneration to which I shall refer is that observed in the liver. The condition of the hepatic cells in this disease has been so well known since Mr. Bowman's discovery of the fatty particles within them, that I need not at all describe the morbid changes characteristic of the affection: nor need I do more than state that the fatty degeneration of the cells is found, not only in that which is called especially the "fatty liver," but in many examples of cirrhosis of the large, pale, heavy, and indurated brawny liver; and of some other affections not yet admitting of exact description, but commonly referred to under the vague names of nutmeg-liver, granular liver, and so on. Omitting these points, I will only offer reasons for rejecting the explanation of the disease which seems generally admitted, and which is, that the fatty liver is one actively discharging its office as vicarious to the lungs, secreting the hydrogen and carbon which the lungs, by reason of some defect of their structure, cannot discharge.

The arguments against this account of the disease are these:—

1. The connection between fatty liver and disease of the lungs is not general. In many who die phthisical, the liver is healthy. In many who have no disease directly obstructing the function of the lungs, the liver is fatty. I may refer to the last three cases of fatty liver that I have examined. One was an osteoid tumor, with only small masses of osteoid disease in lungs otherwise quite healthy: another was a cancer of the breast and spleen, with healthy lungs: the third was a case of delirium tremens with sound lungs. And many of you will at once confirm this statement.

But, 2dly, there is no evidence that the fatty liver does excrete an unusual quantity of carbon and hydrogen; for the feces of patients with this disease have not yet, I believe, been examined.

And 3dly, if the carbon and hydrogen supposed to be formed in extra quantity in the liver be not in the feces, then the lungs would only be damaged by the excessive formation of those elements in the liver.

For the function of the liver, at least in the warm-blooded animals after birth, is preparatory to that of the lungs. Of all the bile secreted, only 1-11th at most passes off with the feces, and this fractional portion does not contain those principles in which most of the carbon and hydrogen are combined. The rest is reabsorbed, and reabsorbed that the greater part may be excreted by the lungs. The contrast between the foetal meconium and the bile of the young child indicates this very plainly. Meconium contains all the principles of the bile; for while respiration is comparatively inactive, all, or nearly all, the bile is excreted *directly*. But the feces of the young child, like those of the adult, contain only the resinous and colouring matters of the bile, and perhaps some of its fat. The rest of the bile is reabsorbed, not because it is really less an excrement than it is in the foetus: it is reabsorbed and combined with oxygen, and so excreted *indirectly*, as carbonic acid and water, with the advantage of contributing to the maintenance of animal heat.

So, then, the connection of the liver with the lungs of the warm-blooded animal after birth is, that the former prepares material for the function of the latter. It would be a strange compensation, if the function of the former were to be increased, while that of the latter is diminished by disease.

And, lastly, all the conditions of the fatty liver show that it is an inactive organ—one which is discharging less than its ordinary function, and the less the more general the fatty degeneration of its cells. In proof of this we have the analogy of all fatty degenerations, the absence of nuclei in the fatty cells, the absence of all appearance of the colouring matter of bile in them, the large size of the liver indicating a tardy or obstructed removal of its cells, the paleness and defective supply of blood, and the frequent coincidence of other morbid changes such as would naturally hinder the proper activity of the organ.

ACTION OF ETHER INJECTED INTO THE ARTERIES.

ACCORDING to the experiments of M. Flourens, it would appear that ether, when injected into the blood-vessels, has an inverse effect to that observed after the inhalation of the fluid. When inhaled, ether suspends sensation before it interferes with the power of motion; but, when injected into the arteries, M. Flourens found that it destroyed the power of motion previously to exerting any influence on sensation: indeed, sensation remains unaffected, unless the quantity of ether employed is very large.—*Gaz. des Hôpitaux*, 5 Juin, 1847:

CLINICAL LECTURE

GIVEN AT

ST. GEORGE'S HOSPITAL,

On May 25th,

By CESAR HAWKINS, Esq. Surgeon
to the Hospital.

[Reported by MR. WALTER THOMSON.]

- 1.—Cases of injury of neck resembling dislocation of vertebrae.
- 2.—Chronic disease of cervical vertebrae.
- 3.—Bone lodged five weeks in the œsophagus.
- 4.—Fibrous tumor of the thigh.

GENTLEMEN,—Upon referring, in order to prevent any repetition in the choice of subjects, to the notes of the clinical lectures I delivered to you during the last summer, I find that upon two occasions I brought before you some cases of disease of the spine; and it is curious that one of them still remains in the hospital, having thus been for more than a twelvemonth under your observation. I refer to a patient named Willis, who was admitted in May of last year, and in whom I opened an abscess of the inguinal canal, of the exact cause of which I expressed some doubt, although I was of opinion that it was most probably connected with some spinal disease—either ulceration of the intervertebral substances, or caries of the bones themselves. Now it is remarkable that, notwithstanding the long time during which his case has been under observation, there still remains a degree of uncertainty concerning its nature; and although he has been in the hospital twelve months since the abscess was opened (during all which time suppuration has been going on), it is not yet possible definitively to say whether the abscess is connected with disease of the spine, or of the pelvic bones, or of the kidney. He has presented no material change of symptoms during that period, except that latterly the urine has occasionally been mixed with blood, and has contained albumen—circumstances which would render it just possible that the abscess might depend upon renal disease, though the probability is that the real cause, as I first suspected, is an affection of the spinal column.*

Now, disease which affects the cervical

* This patient died at the end of July, when the abscess was found to occupy the iliac fossa as high as the side of the vertebrae, and depended on necrosis of the ilium, which had affected the sacro-iliac joint, and the hip-joint, secondarily. The right kidney was converted into a membranous bag, of considerable size, adherent to the under surface of the liver, and containing fluid with a trace of urine.

portion of the vertebral column is somewhat different from that which affects the lower parts. Disease in the neck is not unfrequently of an acute character, and, if unchecked, ends quickly in ankylosis. You will find a numerous collection of cases of acute inflammation of the articulations of this portion of the spine, both of the two first vertebrae and of those lower down, in a paper by Mr. Lawrence published in the 17th volume of the Medico-Chirurgical Transactions; it contains cases published by Rust and others of accidents and diseases of these parts, as well as those seen by himself, and you will do well to read it with attention.

In some cases of disease of the neck the external parts alone, or the several textures of the spinal column, are affected, without the nerves or spinal marrow being in any way implicated; in a second set the inflammation may attack the external parts, and the nerves may be locally affected; in a third the spinal marrow itself may be implicated, and in a fourth the functions of the brain and cerebellum may be so disturbed that death may ensue from the participation of these parts in the disease.

Again, supposing inflammation to be confined to the articular surfaces, it may affect only the bones below the dentata, in which case ankylosis does not interfere with the rotatory, or nodding motions of the head; or it may affect only the two first bones, in which case these movements are quite destroyed; or it may implicate several joints in both those parts with proportionate immobility if recovery takes place.

It is not, however, my intention to bring before you to-day the most common affection of this part of the spinal column, namely, scrofulous caries of the bones; but you may easily learn how serious the disease may become by the formation of abscess interfering with the processes of deglutition and respiration, by looking at the preparations, or by reading Mr. Lawrence's paper, to which I before referred you, and I should recommend you to compare the observations in it with those I am about to make upon two or three cases which have lately been under your notice in the hospital.

I will first speak of an acute case which will not unfrequently come before you, and which is liable to be thought of a more serious nature than it really is.

David Cecil, æt. 15, was admitted, on March 11th, into Wright ward, and our notes tell us that, on his admission, "the head was very much inclined towards the left side; the sterno-mastoid muscle of the opposite side was very tense, and he had no power of moving his head one way or another. He states that a man put a load of hay on his head this morning, and this being

too heavy for him, it forced his neck into its present position."

A child came under my care who had been turning head over heels in bed, and in this case the distortion was so great that it put on exactly the appearance of the dislocation described by Chopart, Desault, and others, in some of whose cases a person, by twisting his neck suddenly, became immediately unable to move it; the head became drawn to one side, and an appearance was produced exactly similar to the distortion which would have existed if a displacement of the bones had actually occurred. In the majority of instances, however, nothing more than a strain of the ligaments exists, and the deformity and inability to move depend upon the inflammation and swelling, and the reluctance of the patient to make an attempt to change his position on account of the pain the attempt produces. In the case before you you saw that the treatment adopted by the house-surgeon was most efficacious. He had—Hydrarg. Chloridi, gr. iij. statim; Haust. Senna postea; Hirud. xij. cerv. applie.; and on the next day the "neck was not nearly so stiff."

On the 14th, the notes say "He can move his neck very well:" and,

On the 15th, "He was discharged cured."

Sometimes similar cases will last much longer without yielding to remedies, and in some of them dislocation may possibly have taken place, though there is no positive certainty that a dislocation really existed in most of the published cases. In some cases a fracture may have occurred of a nature which this preparation will illustrate. The patient from whom it was taken fell from a loft to the ground—a distance of twenty feet. He fell upon his head and shoulders, and in consequence, you see a portion of one of the articular processes of a cervical vertebra broken off, and the bones allowed to become displaced. He had paralysis of the parts below the seat of injury, and died a few days after the accident. There is a case quoted by Mr. South, in his edition of Chelius's Surgery, in which the surgeon made two unsuccessful attempts to reduce a supposed dislocation of the vertebra in this region by making extension and counter-extension. In a third attempt he succeeded in producing an alteration in the position of the parts, and their return was attended with a noise as when a dislocated bone slips into its place. The snap was not loud, however, and perhaps resulted from the readjustment of the parts of such a fracture as this one before you, and not really from a dislocation.

When the case is of the nature of the one you saw in Cecil, you may promise a speedy cure by the application of leeches and cold lotions, and, in the more severe cases,

blisters, which you will sometimes find it necessary to employ, and you need not expect the permanent distortion which would follow a dislocation.

An accident of the same nature as that of Cecil, but of a more chronic character, will occasionally come before you; and you have an instance in a man who was admitted under my care in August last, named John Barker, æt. 45. Our notes for the 28th of that month tell us that "he fell from the top of some steps, and a pail lodged there fell on the back of his neck. The parts covering the neck, from the third to the sixth cervical vertebrae, are tense, swollen, and inflamed; any movement of the head causes pain, although this is not entirely owing to the present accident, he being liable to occasional attacks of stiffness and pain, in consequence of a kick from a horse, two or three years ago," which circumstance, you will observe, complicated the case to a certain degree. He was ordered *Hirudines xviii. parti dolenti; Hydrargyri Chlorid., gt. v. statim; Haast. Sennæ cras mane*. What was chiefly noticed in this case was the very acute nature of the pain, which was so severe as to prevent his sleeping.

On the following day we find, "has not slept at all, on account of the severity of the pain." On his admission, he complained of a want of sensation in his fingers, particularly of the left hand; sensation has now in some measure returned, but the fingers are still slightly benumbed. *R. Opii ℥xx.*; and such notes as this continue:—

Sept. 2nd—"Cannot sleep without laudanum, which has been taken every night, the pain being so severe."

6th.—Pain keeps him awake the greater part of the night, extending from the neck to the fingers of the left hand."

He was put under the same treatment as Cecil; leeches to the tender part, afterwards blisters, which were kept open, and opium was administered in sufficient quantities to procure sleep; he was ordered to rest as much as possible, but, as you might have observed, it was very difficult to keep him quiet; and this you will often find to be the case.

On September 23d, he left the hospital, in opposition to my advice, but was again admitted on the 28th, with a fresh attack of pain in the back of the neck; he was placed under the same treatment, still, however, continuing very restless. The blisters, and other remedies, were repeated, and under them he gradually improved, (still complaining, however, of numbness of the arm and fingers of the left side,) until the middle of November, when these symptoms also went away, and he left the hospital.

In a case of this sort, of so severe a nature, and of such long duration, the patient ought,

of course, to have remained quiet and at rest for a considerable time after the cessation of the pain and other symptoms; but he would not do so, and, consequently, six weeks afterwards, on December 2nd, he again presented himself, with a return of all the symptoms, and was re-admitted into the hospital: after a repetition of the treatment, however, the disease was subdued, and he left on January 7th, at his own request, being much relieved.

I had a man under my care, many years ago, who was suffering from the effects of a somewhat similar accident; he had fallen from a height of ten feet, and was admitted twelve months after the accident. In him there was a greater affection of the spinal marrow, more numbness and palsy of the arms; ten months after the accident, the lower extremities also became affected, and the sphincter muscles of the bladder and rectum paralysed, so as to be unable to retain their contents; he was subjected to the same treatment as the two patients you have seen, and he left the hospital nearly well.

It is doubtful, in such chronic cases, whether there may not have been some slight concussion or bruising of the spinal marrow, with possibly partial fracture of the bones; or effusion of blood among the nerves, or into the spinal canal, so as to affect the lower as well as the upper extremities. Still, although the case *may* terminate in ankylosis, or even in the death of your patient, you have a very good chance, in many cases, of effectually removing the effects of the injury by appropriate treatment.

I will now pass on to a third case, and I will first relate to you the latter part of the case, as the best method of illustrating the points to which I wish to draw your attention.

William Smith was admitted on May 5th into York ward; and our notes say "that shortly after he left the hospital on March 10th, he caught cold, accompanied by pain in the chest, increased on inspiration, and slight cough, with mucous expectoration; the pains in the shoulders, which were not quite well when he left the hospital in March, increased in severity; the pain in the chest sometimes left him, and then returned after a short interval."

About the same time, with these symptoms, he perceived a stiffness in the neck so that he could not bend it without great difficulty and pain, though he was able to rotate it perfectly. There was much pain in the neck, varying in its character, being sometimes dull, and at others pricking and lancinating. He perspires greatly at night, but has had no rigors. Soon after the pain came on in his neck, his limbs started at night just as he was going to sleep. On his

admission all these symptoms were present, but were rather increased in severity; the pain in the shoulders and arms sometimes preventing him from sleeping. - There is dull pain, corresponding to about the region of the seventh cervical vertebra, upon pressing the head vertically downwards. There is slight impairment of voluntary motion and sensation in the arms. His head is always bent down on his chest, so that the chin nearly rests on the sternum, and he moves his head by putting up his hands to support it, and is in fear of pain while doing so. There is more prominence than natural about the lower cervical vertebrae. He has no difficulty of swallowing. Countenance anxious, and he looks out of health. Feels very weak, and trembles much; tongue white; pulse natural.

Such was his condition when he was admitted this last time into the hospital, and the symptoms you would at once assign to disease, either of the bones or of the intervertebral substance, in the cervical region of the spinal column. Of the cough, expectoration, and pain in the chest, I will speak presently. The great stiffness of the neck shows that the lower vertebrae are affected, and the power of rotating the head remaining unimpaired is evidence that the joints between the two first vertebrae are not implicated in the disease. The great perspirations he has had made me look for the formation of matter, though perspirations without rigors are not conclusive evidence of its existence. He has had, as you may have observed, starting of the extremities, occurring just as he was about to fall asleep, a symptom showing that the spinal marrow is in some manner irritated by the adjoining disease. The pain in the chest, and in the shoulder and arms, was very severe after his admission; the prominent nature of this symptom, in similar cases, often leads to the disease of the vertebrae being overlooked, and the case is treated as rheumatism or neuralgia. It is the source of the same error when the disease occurs at the lower part of the spinal column. The pain, referred to the terminations of the nerves, is complained of as affecting the chest or abdomen, and the attention is directed to the lungs, the liver, kidney, or other viscera, while the true nature of the case remains unsuspected.

The dull pain of which he complained, when the top of the head was pressed upon, is often a characteristic symptom of ulceration of the intervertebral substance. The disease is, of course, essentially, of the same nature as when the cartilage of a common joint is affected; and, as you know, exquisite pain is produced in this latter disease by pressing the joint surfaces together. If,

therefore, in the examination of a patient with suspected disease of the bones or cartilages in the neck, you find that acute pain is produced by pressing the head vertically down upon the vertebrae, carefully abstaining from bending the neck, or from rotating the head, you may be almost certain that there is ulceration of one or more of the intervertebral substances present.

You will observe it stated, that in our patient there is a considerable prominence at the back of the neck; this is, no doubt, in a great measure, if not entirely, caused by the bent position in which the patient keeps his head, and not to loss of substance in the front of the spinal column, or dropping downwards of the articular processes which may be present in some cases of this disease.

These two symptoms,—the pain, and the position of the patient, are frequently observed when ulceration exists. The reason is not clear why patients affected with disease of the cervical vertebrae should keep, as is nearly always the case, the head bent forward on the chest; there is no reason why they should not bend it backwards, as, the bodies of the bones being affected, that would appear to be the position most likely to be attended with ease by removing pressure. Instead of this, however, it is observed that the muscles at the back of the neck lose their power of supporting the head, and thus the chin is allowed, by its weight, to fall forwards on the sternum. There is, you will also observe, great anxiety of countenance, to a remarkable extent, indeed: he looks out of health, far more than the disease would be sufficient to account for. This anxiety of countenance, with the other symptoms I have enumerated, are sufficiently characteristic of the disease. The treatment you have seen adopted is such as you will generally find necessary and useful in these cases. Perfect rest of the diseased part is absolutely necessary, but you will generally find it very difficult to persuade these patients to keep quiet. The position should be horizontal, with the head supported on a pillow, neither very high so as to bend the head forwards, nor so low as to allow it to hang backwards, but of such a height as to keep the bones in their proper position; and this you will find to be the one most comfortable to your patient. It is difficult to keep the head quiet, even when the patient is in bed, because such movements of the body as are necessary, are not attended with corresponding movements of the head; and this latter is often moved round while speaking, or turning to take food or medicines, while the body remains quiet. He was cupped to a few ounces on two occasions; morphia was given to procure rest; he had a mixture also

for the cough, and a blister was applied to the neck, and kept open. Under the use of these remedies, our notes for the 28th tell us, he was somewhat relieved.

Here, then, the patient seems clearly to have been admitted with a disease of the intervertebral substances, not the result of an accident, but arising either spontaneously, or (and this brings us back to the commencement of the case) in connexion with the following circumstances:—He first presented himself at the hospital on January 19th, and was admitted into Cholmondeley ward: he then stated that "three weeks ago he swallowed a fragment of mutton bone, which had remained in his throat ever since. A probang was passed the day after the accident, by a surgeon in the country, without any benefit: at the end of a fortnight, a probang was again passed. Previous to this time he had swallowed fluids only, but after the second passing of the probang, he could swallow small pieces of fat, and other soft food. For the first fortnight the pain was very severe, but is now less so, and is chiefly referred to a spot just above the sternum; has much expectoration; has lost flesh lately."

Bougies and forceps of different sizes were passed two days after his admission, and an imperfect sensation felt as of the bone just above the sternum; but the bougie passed beyond the part nearly to the stomach; mucus and a little blood came away on the instruments. This pain and distress were all referred to one spot, which was tender, across the neck, close to the sternum; tenderness and pain were nearly equal on both sides of the trachea, but perhaps more on the right, where the sensation above mentioned, was experienced. There was also slight fulness in the same part, but scarcely, if at all, greater on the right side than on the left: a mustard poultice was ordered to the tender spot.

In this case you see there was a history of a bone having lodged in the oesophagus, and remaining there for a space of three weeks. Now, a man who has, or believes he has, a foreign body in his oesophagus, will present, in any case, a subject for anxious consideration; and, in the first place, the question arises, whether the sharp irregular bone, in passing down into the stomach, might not have produced some degree of laceration, and so the consequent inflammation give rise to a sensation at that part, the same as if the foreign body were still there; this is not an unfrequent occurrence, and the application of leeches and a poultice, succeeded perhaps by mustard poultices, or a blister, may be required to prevent ulceration, and the formation of abscess by the side of the oesophagus. But three weeks is a longer time than you would expect these effects to

remain, unless something more than a mere bruising or laceration had taken place. I need not tell you that, in by far the greater number of cases, a foreign body, once in the oesophagus, will pass into the stomach. There naturally exists some degree of constriction about the situation of the cricoid cartilage, the ring of which being perfect, renders the oesophagus capable of a less degree of dilatation; but if the body have once passed this, there is nothing in the tube itself to prevent its generally passing on into the stomach. In consequence of the source of fallacy from laceration I before alluded to, and of the improbability of a substance remaining impacted so low down, no operation can be thought of unless there is positive evidence that it really is there, and only gentle and judicious attempts must be made to push down or extract the body supposed to be lodged, lest such attempts themselves occasion further mischief. Any foreign body will generally pass on, but still cases may occur attended with much risk and danger. Here is a piece of bone which lodged in the oesophageal canal. Ulceration took place, and an abscess formed, which, bursting into the mediastinum, produced inflammation of both pleurae, and terminated in death. The patient, indeed, was a quadruped, but the same thing happens also in human patients.

Very nearly at the same time that Smith was admitted, there was a patient in the Middlesex Hospital, in whose oesophagus a foreign body had lodged, and the question of the propriety of performing oesophagotomy was considered. There was not thought to be sufficient certainty of its presence to warrant the operation, and the patient died from exactly the same cause as the dog from whom this preparation was taken.*

You may remember that in Smith's case a consultation was held on the 27th to decide whether any attempt to remove the bone should be made, and an instrument was passed as before, but the bone could not satisfactorily be felt, and the symptoms were not considered sufficiently urgent in themselves to justify an operation. Our notes for that day tell us, that "the fulness and tenderness were almost gone,"—the mustard poultice having been applied twice, and some leeches were ordered after the consultations, which prevented a return of these symptoms.

It was determined then not to perform an operation which is both difficult and dangerous. You may perceive some of the difficulties you

would have to contend with, by performing it upon the dead subject, but you may be sure that it is much more so in an operation on the living. You may judge from the following circumstance also. A very distinguished anatomist once tried to perform oesophagotomy for the relief of a patient with scirrhus stricture of the oesophagus, but the injected fluids passed into the anterior mediastinum instead of the stomach, and of course the patient died.

Our notes for the 29th are,—“Swallows more easily; some pain in chest; sounds of heart unnaturally loud on right side.”

On the 30th, “Pain in chest more severe. 4 P.M., whilst taking some tea, he tried and succeeded in swallowing a piece of crust of bread, which forced the bone from its position, as it was distinctly felt to pass into the stomach, after which he could swallow as well as ever.” He took some castor oil at his own request, to help it onwards I suppose; and on the following day, we find “piece of bone has been passed by the rectum:” and this fragment of mutton bone, about two-thirds of an inch long, was presented to me. I made careful inquiries in order to ascertain that no trick (as some persons suspected) had been played, but I found that nothing of the kind had been in the ward, and I have no doubt that his account is correct. He has never complained of difficulty of swallowing since, and has now no soreness in doing so, so that it would have appeared that all the symptoms had been owing to the actual presence of the bone, and that it had remained there five weeks without producing any abscess. But about this time some other symptoms appeared, which had existed obscurely before, but had not till now been well marked. Our notes tell us, “it was not till after the sensation by the patient of the bone passing on the 30th, that the pain became very marked in the chest. It extended across the upper part like nervous pain. Expectoration of mucus continues as before, but there is no cough. The sounds of respiration natural, except that the heart is audible on both sides of the chest. Heart's sounds natural. No pain on the fullest inspiration.”

The pain produced some obscurity. He was seen by the physician, in case there should be any disease of the lungs going on, but these organs were found healthy. I watched him carefully lest an abscess should be forming, but there has been no appearance of matter; and from this time, our notes inform us, he gradually improved.

On February 19th, we find “pain in chest continues; chin somewhat depressed upon the chest; pain in neck on elevating the head; no pain on inspiration.”

On 24th, “some pain continues, chiefly in the left side of the chest.”

* Some cases of abscess around the oesophagus from the lodgment of foreign bodies have also been published since this lecture was given, which took place at the London Hospital, one of which was saved by the abscess being opened.

On 26th, "less pain in neck on elevating the head."

On March 5th, "complains of rheumatic pains about the shoulders and across the chest. Can raise his head without pain, and can swallow without pain or difficulty." And on the 10th he left the hospital apparently nearly well.

But as the case proceeded, you see a new set of symptoms (with which I commenced) became developed, indicating disease of the cervical vertebrae, and consequently there can scarcely be any doubt that these curious symptoms depended upon some real disease just commencing at that time, but which appeared to arise from irritation excited by the bone.

And now two or three interesting questions arise. First, the bone being lodged, and abscess being liable to form between the oesophagus and spine, did the presence of the bone give rise to disease, and were the symptoms not only indicative of such disease of the vertebrae having commenced, but actually the result of the lodgment of the bone? I am inclined to think not. No difficulty of swallowing remained after the bone passed down, as would have been the case if ulceration had taken place in the tube, or if abscess had formed. Neither did any pain remain in swallowing. A lady who was under my care with an abscess in this situation suffered such pain and inconvenience that she was almost entirely unable to swallow, or even to breathe freely. Neither of these remained in our patient after the bone had passed on.

Again, it might be supposed that the disease, commencing in the spine, had given rise to the whole train of symptoms. Affections of the cervical vertebrae, both acute and chronic, sometimes occasion derangement of the function of deglutition, and the bone might become fixed, in consequence of the impaired muscular power. It is a possible suggestion. A woman came under my care, believing that she had a piece of meat sticking in her oesophagus. On examination, I found a malignant stricture, which had probably existed for some time, and which had been indicated by no symptom until irritated by the passage of a morsel larger than usual. In this way it is possible that the disease might have commenced in the vertebrae, and been aggravated and made more active by the lodgment of the bone. But, on the whole, it appears to me most probable that the lodgment of the bone and the disease of the spine were unconnected. You will do well to watch the case. Much will depend on the local effects of the disease,—much on the effect it may have on the system. It will be weeks or months before it can be

cured, and will not improbably terminate fatally.*

There is another case, about which I might have reserved my remarks until you had seen more of it, but which I prefer to notice before any operation is performed.

George Webber, æt. 15, was admitted into Wright ward on April 7th, and our notes tell us "there is a tumor, about the size of an orange, situated two inches above the knee: it is very moveable laterally, but cannot be lifted up from the bone: it can be pushed easily from side to side when the quadriceps extensor is relaxed, but is more fixed during the action of that muscle: it is apparently placed *beneath* the muscles. It is exceedingly hard—almost like bone. There is no pain on pressure, and the movements of the limb are not at all interfered with. It commenced about two years ago, and followed a blow which he had received three months previously. When he first observed it, the tumor was about the size of a walnut, and has since gradually increased. There is some aching pain in it occasionally when he is at rest, but not when he is walking. The tumor appears to be divided by a depression in the middle, from the tendon of the quadriceps passing over it. It is of uniform hardness, and not lobulated. There is scarcely any space between it and the synovial membrane when the limb is straight; but, in the bent position of the leg, the tumor is drawn further away from the patella. It is too hard for fat, and too moveable to be connected with the bone itself. Patient's aspect is perfectly healthy. He has walked about as usual up to the time of his admission."

Here, then, is a patient with a tumor situated near the knee-joint, and the first point to be decided is, the method of getting rid of it. It is quite improbable that this can be done by remedial measures, and therefore an operation must be resorted to; and the question then arises, of what nature that operation shall be. The tumor is hard, large, situated under, and probably connected with, the quadriceps extensor, and not adherent to the bone. There is no enlargement of the glands in the groin, nor any disease elsewhere; so that it is not likely to depend upon any constitutional affection, and therefore is probably not malignant: it is most like a fibrous tumor. It is true they are not often found in this situation, but there is a space beneath the quadriceps extensor abounding in fat and

* The patient has since had acute rheumatism, and the cervical disease has perhaps made some slight progress, some slight difficulty of deglutition having been added to the pains in the upper extremities and chest, and there being somewhat more tenderness in the neck.—July 2d.

tough cellular tissue; and a tumor formed here, though not originally fibrous in its nature, might have that character given to it from the periosteum. Tumors not malignant may form of a very large size, as you see in this preparation, where there is an apparently fibrous growth at the lower part of the thigh as large as a child's head, unconnected with the bone.

On the supposition (which is most probably the correct one) that the tumor is fibrous, nothing remains to be done but its removal by the knife; and, from its situation, this would be an operation of a very serious character. The tumor is increasing in size. The notes for the 14th are—"Tumor rather increasing. Has more pain in it, both when the limb is at rest, and when in motion, as in walking upstairs." And by the 26th we find that it had increased to fully an inch more than its original size. The mercurial ointment applied at first by mistake, and the ointment of the iodide of potassium which he has been using since, have had no effect in arresting its growth, and it is obvious that nothing but its removal can be of any service. If it be of a malignant nature, of course the removal of the tumor *alone* will not suffice, though, if not, that will be the most proper proceeding. Lying beneath the muscle, it is probably very nearly in contact with the synovial membrane, but, from its moving upwards when the leg is flexed, it is most likely *not* adherent to it. There is, too, a space between the extensor muscle and the bone, where it would be possible for a tumor to lodge without being in contact with the synovial sac.

Taking these points into consideration, I have determined, after consultation, to attempt its removal by cutting through the fibres of the vastus externus muscle, and so exposing the tumor, then drawing it carefully out and dissecting it from its attachments. It will be no trifling operation. The articular arteries are large and numerous, and there are many muscular branches of large size which will probably bleed much, as in all operations within or among muscles. There will most likely be much hæmorrhage at the time of the operation, and, from the great depth of the wound rendering it difficult to tie the vessels, perhaps some secondary bleeding. After the operation, too, it would not be prudent to heal up the wound, as there will be, no doubt, extensive supuration in the deeper parts.

Again, it is not improbable but that we shall find the tumor attached to the synovial membrane; or, again, it *might* prove to be of a malignant character. Now, supposing the latter should be the case, it would then be necessary to proceed at once to the amputation of the thigh. But if the joint

should be opened during the operation, must we then also remove the limb? I think not. It is true the subsequent condition of the joint would be very precarious, and even his life endangered; but such cases do get well, and I think our patient would have some chance of saving his leg, although, of course, with much probability of the tibia and femur becoming ankylosed. I have thought it right to prepare him, lest it should be found necessary to proceed to the greater operation, and I think you will find the case well worthy of your notice.

[The boy's friends refused to have the operation performed at present, and he left the hospital shortly after.]

Original Communications.

A REMARKABLE CASE OF SPONTANEOUS GANGRENE.

WITH OBSERVATIONS ON THE NATURE AND TREATMENT OF THIS DISEASE.

By HENRY WILLIAM FULLER,

M.B. and L.M. Cantab.

Medical-Registrar at St. George's Hospital.

[Concluded from page 190.]

It will be granted, I think, that obstruction to the arterial circulation, and consequently to the nutrition of the affected part, is the proximate cause of this species of mortification. Observation and experiment directly tend to this conclusion. From the age at which such cases are generally met with, and the frequency of osseous or fatty degeneration of the arteries at that advanced period of life, it is not surprising that such local alteration should have been found coincident with this form of mortification: but as certain cases, as the one before us, occur independently of any such change,—as great ossification has been frequently found to be perfectly compatible with a tolerably free circulation,—and as, whether ossification does or does not exist, the obstruction which ultimately gives rise to gangrene is in most cases brought about by the formation of coagula in the arterial tubes,—the only question is, as to the origin and mode of production of these coagula. They have been usually regarded as connected with, and dependent on, some of the following causes:—

1st. On ossification or some other disease of the heart and large vessels, or of the vessels supplying the diseased part.*

2d. On spicula of bone projecting from the internal coat of the arteries, or on some mechanical obstruction to the arterial circulation.

3d. On extreme old age, and its accompanying debility, or on deficiency of nervous energy, arising from an intemperate, irregular mode of life.

4th. On insufficient or unwholesome food.

5th. On arteritis.

Now, even admitting that some or all of these influences may sometimes be sufficient to give rise to coagulation, still, in the case before us, we have ample evidence as to the non-existence of any of these alleged and commonly received causes of gangrene. The absence of the two first was clearly proved by post-mortem investigation. She had lived a regular life, was in the prime of life, in comfortable circumstances, and in tolerably good health; so, to her case at least, the 3d and 4th causes are manifestly inapplicable; and the absence of the 5th is equally certain when the circumstances of the case are fairly considered. But, as undue importance has been attached to this last alleged cause of senile gangrene,—as a principle of practice has been laid down in conformity with this view of the disorder,—and as both the theory and plan of treatment have been sanctioned by the high name of Dupuytren†, and are still maintained and acted on by some practitioners, more especially on the Continent, I propose to enter somewhat in detail upon the points which bear on the question at issue.

In the first place, then, the length of time which elapsed between the commencement of her illness and the production of gangrene is not a little remarkable. She was seized with violent pain on the 8th, and it was not till the 22d, or 14 days afterwards, that there was ocular evidence of local mischief. Her symptoms, in the meantime, were by no means calculated to

excite alarm: she complained of excessive pain in the leg, was somewhat restless in her manner, and appeared to be in some way out of health; but the part affected remained perfectly cool, without redness or swelling; her tongue was moist and clean; her pulse soft, and but little accelerated; and the ordinary excretory functions were properly performed. What symptom, then, was there of inflammatory action, much less of inflammation of the arteries themselves? We all know how severe, from the very first, are the constitutional symptoms produced by phlebitis; and surely the disturbance arising from arteritis can hardly be less so. As, then, it is but fair to suppose that the cause which ultimately gave rise to the obliteration of the vessels, and so to the production of gangrene, was from the first in action, we must either admit the occurrence of arteritis without local or constitutional symptoms of inflammation, or reject the supposition of arteritis as inapplicable to the case before us.

But again: the disease progressed to a fatal termination; and how did the post-mortem appearances bear out the suggestion of inflammatory action? There was not the slightest evidence of its occurrence. The arteries and veins were all blocked up by firm fibrinous coagula, but the coats of these vessels were in no way thickened or discoloured, nor did they bear any signs of inflammatory action; and, corresponding as this does with the history and symptoms of the case during life, it cannot, I think, be fairly supposed that the fibrinous coagula resulted from an action which, during life, must have produced great constitutional disturbance, and must have left, at such a period after death, unequivocal traces of its previous existence.

One other point in reference to this subject may be briefly noticed. At the expiration of 14 days, constitutional symptoms began to manifest themselves, and these might perhaps, by some, be referred to the occurrence of inflammatory action. But, without stopping to question the correctness of this diagnosis, I would remark, that, as gangrene had then commenced, obliteration of the arteries must have already taken place, and no inflammation which may subsequently have

* Dr. Carswell denies the occurrence of this form of gangrene independently of a morbid state of the arterial system. See Article "Mortification," *Cyclop. Pract. Medicine*.

† *Leçons Orales de Clinique Chirurgicale*, Tom. iv. p. 481.

arisen can at all account for that obliteration.

On what, then, does the coagulation in these cases depend? In some instances arteritis, in others excessive osseous deposits, and consequent interruption to the arterial circulation, may serve to explain this curious phenomenon; but, to me, I confess, some peculiar condition of the blood itself, connected with a morbid tendency to coagulation, appears in most cases necessary to afford a satisfactory solution of the difficulty.

For in the first place, though the arteries in this form of gangrene are invariably obliterated, and generally blocked up by firm fibrinous coagula, yet no particular local change is found constantly present with the formation of these coagula, which sometimes goes on, as in the present instance, independently of any local alteration whatever. This process of coagulation, therefore, though possibly accelerated by, cannot be dependent on, any local mischief.

2dly. Not only is there no *a priori* reason why, in certain conditions of the circulating fluid, spontaneous coagulation may not take place, but the great variation in the tendency to coagulation evinced by the blood of persons in comparative health would lead to the supposition that such a phenomenon may sometimes occur. And this view is confirmed by reference to morbid states of the system: for, while in purpura, for instance, the blood is found to be extremely fluid, in the disease under consideration the extent of its coagulation is no less remarkable. Now, as in the one case, judging from the symptoms during life, borne out by examination of the blood itself, we do not hesitate to acknowledge, as the cause of its fluidity, a great deficiency of fibrin in the circulation, there surely can be no valid reason why we should not apply a similar test in the other, and recognise, as the cause of its spontaneous coagulation, an opposite condition of the vital fluid. Such being the case, then, the vast extent and completeness of the coagulation which accompanied the case now under consideration may fairly be appealed to in proof of great increase in the amount of fibrin in the blood, and of its consequent tendency to spontaneous coagulation.

3dly. Pathological observation furnishes us with presumptive evidence of spontaneous coagulation. The interesting cases of fibrinous obliteration of the pulmonary artery which have lately been reported by Mr. Paget are hardly referable to any other cause; and in the *Dictionnaire de Médecine* (p. 119) is mentioned a case, where, without the slightest trace of disease of the vessels, spontaneous gangrene of one lung occurred in connection with the formation of similar coagula. And, as a proof that such obliterations are by no means peculiar to the pulmonary artery, I may cite a case reported by M. Bérard in the Transactions for 1830 of the Anatomical Society of Paris, in which gangrene of one-half of the brain arose from a similar local obstruction, occurring independently of any arterial mischief: so that not only would theory lead one to suspect the occasional occurrence of spontaneous coagulation, but the correctness of the theory is directly attested by several most interesting pathological facts.*

4thly. In the case before us there is almost positive proof of a tendency to spontaneous coagulation. For not only were the arteries and veins of the affected limb distended with fibrin, but two coagula, of manifestly long standing, and exactly resembling those discovered in the aorta and in the ilia, in the femoral, tibial, and other arteries of the gangrenous limbs, were found, the one impacted among the fleshy columns of the left ventricle, the other in the right auricle of the heart.

As, then, we are necessarily brought to the conclusion that these fibrinous coagula were formed independently of any local cause, and that no valid reason exists why they should not have resulted from spontaneous coagulation, the inference immediately and naturally follows, that the partial ossification of vessels occasionally met with accompanying mortification should, in most cases, be regarded as a simple coincidence, and by no means as the cause of the formation of coagula.

The extent to which coagulation had proceeded in this case is somewhat remarkable†. When viewed in con-

* For reference to these cases I am indebted to my friend Mr. Prescott Hewett.

† The only case I can find on record of coagulation having proceeded to the extent it did in the present case, is one communicated to the

nection with the absence of febrile symptoms, and with the progressive increase of constitutional depression, this, again, would seem to indicate an unhealthy condition of the blood itself—a condition unirritating, and consequently unproductive of febrile disturbance, but unfit for the purposes of nutrition, and therefore inconsistent with the maintenance of the vital functions. And I venture to throw out the suggestion, whether the pallid, exsanguine appearance of the sufferers, and the extensive fibrinous coagulation which occurs in these cases, would not seem to indicate, the one, a deficiency of the red globules of the blood, the other, a great relative increase of fibrin. For the former condition the preparations of iron are valuable remedies, and it is, perhaps, worthy of consideration whether, in addition to the opium, bark, wine, and support, which are usually administered in these cases, the exhibition of iron might not be had recourse to with a reasonable prospect of success. If only as a decided stimulus to the circulation, it is, I think, fairly entitled to a trial.

For the correction of the latter state a remedy is not so apparent: but since acids are of such essential service where there is a deficiency of fibrin, with increased fluidity of the blood, and a lax state of vessels, as in scurvy, purpura, and many other disorders; so, on the other hand, full and repeated doses of alkalies, or of the neutral salts, when combined with opium, tonics, and stimulants, might be serviceable in those cases where an opposite condition appears to exist.

Another practical question naturally suggests itself: viz. as to the propriety of amputation in this form of mortification. Adopting my theory that the blood is in an unhealthy condition, and has a tendency to coagulate spontaneously, the operation must be useless, if not absolutely pernicious, while the gangrene is spreading; for, by removing the part where coagulation has taken place, or is still going on, the disease itself, the morbid tendency to the formation of coagula, is by no means got rid of, but may manifest itself in the stump, or in other parts of the body, just as it commenced and

gave rise to gangrene in Mrs. Davies's left foot some eight days after the right had become mortified. The difference of opinion as to the propriety of operating while the gangrene is spreading, has arisen, I conceive, from an imperfect view of the origin of the disease. Regarding all cases of spontaneous gangrene as dependent on some mechanical obstruction to the circulation, practitioners have recognised no essential difference between those connected with mechanical pressure, and those arising, as they conceived, from another local cause, viz. ossification of the vessels. But the difference becomes apparent when the cause of the disease in the various cases is fairly understood. For where gangrene occurs from interruption to the circulation, occasioned by ossific deposit in the arteries, the patient is probably far advanced in life, and the disease being by no means confined to the vessels of the affected parts, the operation is hardly likely to be successful: and when it arises from a constitutional disorder, giving rise to spontaneous coagulation of the blood, the operation can be successful in those cases only where a line of separation is distinctly marked between the dead and the living parts; in cases, in fact, where there is some evidence of the cessation of this morbid tendency to coagulation. But where it occurs from mechanical local pressure (and many such cases have been quoted as proofs of the successful issue of amputation during the spreading of spontaneous gangrene), then it is clear that the tendency to gangrene being necessarily confined to the parts situated beyond the seat of obstruction, amputation will have a fair prospect of success (if other matters are favourable), even when the gangrene is in a spreading state. For if the operation be performed above the seat of pressure, the disease and its cause will be removed together; and even if it be not performed as high up in the limb as the seat of obstruction, still the parts below need not necessarily all pass into a state of mortification: for in many cases collateral circulation may have been established, sufficient to preserve the upper part of the limb, yet insufficient to protect its extremity from the effects of defective nutrition. So that, in considering the propriety of operating in gangrene arising from internal

causes, this essential difference should be kept in view; and before any course of treatment be decided on, the cause of the mortification should, if possible, be ascertained. The practical question, indeed, appears to be, not so much whether there may or may not be ossification or other disease of the arterial tubes, but whether there exists any local mechanical cause to obstruct a free circulation in the part. If such an obstruction can be proved to exist, and the life of the patient appears to be endangered by the progress or continuance of mortification, then it becomes a question whether it would not be the safest plan to remove the part either above or below the seat of obstruction; and then, of course, the existence or non-existence of ossification of the vessels would materially influence the decision arrived at.

But where no obstruction can be proved to exist, then an operation appears to me inadmissible, unless a line of demarcation has been fairly marked between the dead and the living parts; for whether the patient be old or young, whether the disease be or be not connected with ossification of the arterial tubes, it can no longer be regarded as a local disease, but must be looked upon as arising from causes exerting a wider and more general influence, and not to be removed by means of the scalpel. Where the vessels are more or less completely ossified, and the gangrene is dependent on such a cause, there is just a chance of recovery in the event of an operation: but where no ossification or other cause of obstruction exists, the system itself, or the blood it contains, is at fault, and there cannot possibly be a prospect of success.

One other point in reference to this case is, perhaps, worthy of remark: I mean the strange variation in colour which the affected limbs underwent. The skin, in the first instance, became mottled, and of a reddish purple colour; this was afterwards superseded by blackness, which yielded in its turn to vivid scarlet, and this again to an inky-black. The scarlet colour was most intense and most remarkable; but it can hardly have been an evidence of returning action, for there was no increased warmth in the part, and nothing at all indicative of such a change. I can only conceive it to have

arisen as similar appearances are occasioned after death, viz. by exposure of the blood stagnating in a minutely injected membrane to the influence of the external air. The inky-black colour which supervened shortly before death, accompanied as it was by an intolerable stench, I should be inclined to refer to incipient decomposition. Whatever the cause of these various changes, I can find no record of similar appearances.

45, Half Moon Street, Piccadilly,
July 20, 1847.

REMARKS ON DELIRIUM TREMENS.

By W. F. SOLTAU, M.B. & Coll. Ball. Oxon.
Plymouth.

[Continued from page 676, vol. xxxix.]

IN resuming the subject of delirium tremens, we have to consider its causes, diagnosis, and prognosis.

Causes.—The nomenclature of disease fails to fulfil its end, if it is allowed to possess the mind with certain prejudices, and thereby bias its judgment. So associated may be a particular disease with a particular cause, as to lead to the belief that its symptoms can be dependent on no other for their development; and this, to a certain extent, is true, especially in diseases of a specific nature; but if the law be made too absolute, or applied too indiscriminately, it may be productive of much evil, by leading us to question the possible nature of a disease, because we cannot assign its origin to a certain cause. This remark applies to the disease now under consideration; for so connected is it in our minds with intoxicating liquors as its cause, that to say a patient is labouring under delirium tremens is tantamount to saying he is a drunkard. The very mention of the disease stamps the character of him suffering from it, so that in certain cases, where its symptoms are well developed, we are at times obliged to silence our suspicions from the conviction that should we be correct, the object of them has been a deceiver all his days, and has left it for his disease to disclose his secret fault. Who is there that has not experienced some such feeling, when, during the treatment of a case, phe-

nomena have shewn themselves, the reality of which he almost attempts to question, because the cause he has been wont to associate with their development stamps the character of the patient he is attending? And this may be a right feeling, for we can never be too cautious or too charitable in our views where the question of reputation is involved in the opinion we may form. It would be better to err on the right side, under such circumstances, supposing that could be done with safety to our patient; but it happens that cases of this character are such as will admit of no doubt if they are to be treated successfully. If the character of a disease be mistaken, it matters not how, so will be its treatment. Similar symptoms require similar remedies; deny their resemblance, and the proposition is reversed. As long as delirium tremens be associated solely with intemperance as its cause, so long will there be a hesitation in recognizing its features; but if its origin can be traced to other sources, and this be generally admitted, there will be less reason for arguing against our own convictions, because charity alone forbids us to entertain them.

When we examine the *modus operandi* of alcohol, in its causation of delirium tremens, we may fairly conclude that any other agent that may tend to produce a similar effect on the economy, may be regarded as a cause. The truth of this remark forcibly struck me in a conversation which I lately had with an eminent physician of this town, on a case of interest which he had been attending; when asking him the nature of the disease from which the patient suffered, his reply was, "delirium tremens." Now, had he made me this answer some years ago, I should have either questioned the correctness of his judgment, or denied the possibility of his conclusion. What! delirium tremens in an individual noted for his extreme temperance and moderation—delirium tremens in one whose only fault, if fault we dare call it, was his abstemiousness?—No, it cannot be, for this would be at variance with the laws and doctrines of medicine. But yet the symptoms were too evident to admit of a doubt as to their character; neither was this an isolated case, for, in the

course of his extensive practice, this physician had witnessed similar phenomena make their appearance in cases, and under circumstances, where they were to be least expected; and he had thus been led by experience to assign their origin to other causes than those generally recognized. Now, in order that we may consider this point more in detail, let us examine in what manner alcohol acts upon the system, so as to induce delirium tremens. It acts in two ways; first by stimulating, and then by exhausting. We know that a muscle overstimulated loses by degrees its nervous power; and this may be carried to such an extent, that at length it is paralysed, and ceases to act. Alcohol taken in undue quantity first stimulates, and thus may be considered as the predisposing cause of delirium tremens; when, however, this effect has passed off, it leaves behind it a feeling of exhaustion and enervation throughout the whole of the frame, which, if not relieved by sleep, or a repetition of the stimulus, will increase till the natural irritability of the muscular system is lost; it is therefore the withdrawal of alcohol which is to be regarded as the exciting cause of this disease. Something occurs which debars the habitual drinker from his wonted allowance; it may be that he is attacked by some mild disorder, as diarrhoea, influenza, or the like, which reduces his vital powers, already impaired by dissipation. Hitherto the system has been sustained, however artificially it may be, by drink; suddenly this is withdrawn,—its only stay and prop; no marvel, therefore, at the consequences which follow. Look at the habitual dram-drinker,—mark the condition of his muscles before he has had his morning's allowance,—they are in a perpetual tremor. I have now before me a well-marked instance of this in the person of a butler, who is the laugh of the younger members of the family with whom he resides; if he attempts to move a plate of eggs from the table, such a noise do they make whilst rolling and shaking in his grasp, as though a series of galvanic shocks were passing through him. But he knows the remedy for this; for it only occurs when he has been prevented taking his early dram; no sooner has this been accomplished,

than his muscles seem to recover their proper tone, and his hand is again steady. So with every other systematic dram-drinker; he is never himself (if one may use such a term) until he has had his usual allowance; before this his feelings are most miserable, he has all the threatenings of the "horror," and is afraid of being left alone, being terrified at his own shadow; every nerve in his body is unstrung, every muscle has lost its obedience to the will; but no sooner has he well dosed himself with his infallible remedy, and he is again fitted for the duties of life. Now it is not the drunkard as much as the habitual tippler that is the subject of delirium tremens, and it is necessary to bear this in mind, for there are many of the latter class who pass current with the world as steady, if not actually as sober, and this because they are never perhaps seen to be intoxicated, and yet, all the while, are seldom quite sober. This class of persons are constantly drinking on the sly, and, in fact, they deceive themselves in this very way; because they do not take much at a time, they imagine that a little, taken often, can do them no harm; and thus, if they are in the way of temptation, they are always drinking, though, perhaps, never drunk; they are enabled to follow their usual avocations, and so completely do they escape suspicion, and so well do they carry on the deception, that their most intimate friend may all the while be unacquainted with their secret propensity. In all cases of this kind we must receive with caution the story told us by such parties as may be connected with the patient; for when he is labouring under a disease, the result of his vicious propensities, the exposure of the cause immediately involves the respectability of his character, and as his livelihood depends upon it, every attempt is made to keep back the truth; should it come out, and he recovers, his character is gone, his situation taken from him, and he, perhaps, ruined. Foreseeing these results, many are there who consider they are justified in telling a false tale, and who even when pressed with the responsibility that attaches itself to them, will, to the very last, pertinaciously adhere to what they

know to be untrue, though the life of another may be sacrificed by it. It is well to remember that habits of vice may be so secretly indulged in, as to be kept even from a bosom friend, whilst, on the other hand, if known by him, a questionable sense of honour prompts him to such silence, that if questioned on the subject, he imagines that he is warranted in telling a falsehood, rather than by revealing the truth to betray his friend.

Alcohol and opium are the two most common causes to which the origin of delirium tremens has been assigned. Hitherto our experience in this country has been confined, almost entirely, to the former of these; it is, however, said that opium eating has been on the increase amongst us since the rigid laws of temperance and teetotalism have so strictly forbidden the use of all fermented liquors. Whether this be or be not the case, let us look at the general history of this disorder, as it is found in those who habitually indulge in the abuse of alcoholic stimulants. A person thus addicted is attacked with some casual complaint, or meets with an accident requiring confinement, which cuts him off from all access to drink; it may be, at first, that nothing peculiar is marked about his case, when suddenly, and almost without any warning, the symptoms of delirium tremens burst forth, and rage in all their fury. But how are we to account for this?—Let us look to the condition in which disease overtakes him; so destructive to health have been his habits, that he has no stamina left wherewith to meet its debilitating effects; having subsisted upon drink, and little else, he has temporarily supported his system by an unhealthy and unnatural stimulus, which has tended, by degrees, to undermine every healthy organ in the economy; the muscles, nerves, and other structures, losing their proper nourishment, are unable to perform their respective functions; the sallow complexion, the haggard look, the ferrety eye, the unsteady gait, each and all tell their tale, and declare the havoc produced on the frame. With vital powers thus greatly reduced, and with no supplies to fall back upon when emergency requires, what must be the result when to all this another depressing agent is added

in the form of exhausting disease? The artificial stimulus by which life has been mainly supported is at the same time withdrawn, and nothing remains but a frame irritable through exhaustion, calling aloud for repose, but prevented by its very condition from obtaining it; so that the very disease increases itself, for in proportion as the nervous powers are exhausted, so does the excitement abound, and the more the strength is lessened, the greater are the calls upon it. As the disease advances, so do the muscular tremors, and the profuse perspirations increase, till at length the system is too worn out to take rest, and too over fatigued to be quieted.

The mania which attacks mothers during lactation, may be adduced as an instance of disordered state of the nervous system, arising from exhausted vital powers, in which the symptoms so much resemble those of delirium tremens that it is difficult, at first sight, to assign to them their proper cause until the history of the case be inquired into. The similarity is still more striking when the affection is accompanied, as it occasionally is, with tremor of the muscular system. There is another form of delirium, perhaps not so common, which sometimes attacks those who are in the last stage of phthisis pulmonalis; I have lately had an example of this in a young patient I had been attending in the last stage of acute phthisis, or galloping consumption. Here the mind became affected three weeks previous to death, and as the patient became weaker the excitement increased; so that although the bodily weakness was excessive, yet, at times, so violent was he in his attempts to get out of bed, that it required two or three persons to restrain him, though, in the intervals, he was too weak even to feed himself; and within four hours of his death he sprang from his bed, as though suddenly endowed with supernatural power, and attempted to escape at the door. Anything, therefore, which tends to lower the vital powers of the economy, the nervous energy of which has been already exhausted, may be productive of a condition similar to that of delirium tremens; so that though a case be presented to us with features closely resembling the latter affection, we are not to conclude it has

no affinity with it because it has not a common cause of origin. Bearing this in mind, we may be able to solve many difficulties, and explain anomalies arising in the progress of disease, which otherwise would perplex us, and perhaps lead to erroneous treatment. We might, for example, be hastily summoned to a patient in the following state:—his countenance wild, his eye staring, his face pale, his manner excited, imagining that nothing is the matter with him, angry at the thought of restraint, and anxious to leave his bed. No symptoms, characteristic of inflammation about the brain, can be discovered; we are told that the disease came suddenly on, and on examining with care the history of the case, we at length, perhaps, find some physical or moral cause, which, acting as a depressing agent on the system, has given rise to the phenomena as evidenced to us. The lancet and other depleting remedies, which at the first blush of the case might have suggested themselves to us, are forthwith foresworn, and stimulants and opiates used in their stead. An error in diagnosis would here involve the patient's life, and this set of symptoms may be manifested during the progress of any disorder where the previous habits of life had impaired the general health of the patient by debilitating, it matters not how, the natural tone of his system.

The effects of over-excitement have been experienced, at some time or other, by most of us; we know what it is to be over-fatigued, when we seek for rest but cannot obtain it; we seem to be in a condition to invite sleep, and yet it will not come to us. Great joy or grief act in the same way as over-fatigue, and if indulged in for any length of time, may seriously impair the physical and mental condition. Young children of irritable temperament, if over-excited, are unable to compose themselves, and will pass restless nights, if not thrown into convulsions; the speculator and the gambler, who live a life of constant anxiety and suspense from the nature of their pursuits, are often reduced to a condition bordering on that of delirium tremens, though they may purposely abstain from alcoholic stimuli; the appetite becomes impaired, the

digestive organs disordered, sleep is disturbed by the worry and incessant care which attend their pursuits. In all such cases a great demand is made upon the nervous system, and the loss which the whole economy thereby sustains is not replaced; as long as the digestive organs perform their proper functions, and the appetite remains good, none of these phenomena will arise.

Diagnosis.—The two diseases with which delirium tremens might be confounded are, inflammation of the brain, and mania. An error of judgment as to the former of these would lead to the most disastrous consequences; for it is scarcely possible to mention two diseases which require more opposite treatment than delirium tremens and phrenitis. In all cases which I have seen, the symptoms have been so well marked as to render it almost impossible for a mistake to be made. There has been no fever, no intolerance of light: the pupil has acted freely, and, instead of the dull and heavy manner so often seen in affections of the brain, there is a quickness and excitability almost characteristic of the disorder. The delirium, too, is of a busy character, connected usually with the ordinary occupations of the patient, instead of the incoherent wanderings which attend cerebral inflammation. It is true, indeed, that patients suffering from this last disease are occasionally very violent and noisy; yet the whole aspect of the case is different. If spoken to, they are often unable to reply; and if any answer be given, it is quite unconnected with the question. In delirium tremens, the very reverse is the case.

Now the diagnosis between delirium tremens and mania is not always so easy to make out; nor do I think, when it is a question as to which of the two a set of symptoms which present themselves to us belong, that it will matter much as to treatment on which we may decide. The history of the case may sometimes help us, but they cannot always be relied on. As a disease associated with exhausted nervous and vital power, it resembles those attacks of mania that have their origin in a similar cause. All treatment being based upon diagnosis, the correctness of the one is dependent upon

the accuracy of the other. When, therefore, the general character of a disorder be understood, it matters little as to the name we may assign to it, our object being to distinguish between excitement the result of inflammatory action, and that which follows depressed and weakened nervous influence.

Lastly, with regard to prognosis. This must be formed upon the same general principles as regulate us in other diseases. The state of the patient, as to whether his constitution be much impaired by dissipation,—whether it be the first or the second attack of the disorder, the second or third attacks being, generally speaking, more severe, and therefore tending to a fatal termination,—are guides that may assist us. When once sleep has been obtained, we may consider our patient out of danger, though the case I reported in the *MEDICAL GAZETTE* proves that this rule has its exception. Until this end be gained, we must be cautious in the opinion we may give. Though there be nothing in a case that may apparently warrant our anxiety, yet there is something so insidious in the progress of the disorder as to keep us ever on the watch. The sudden termination of delirium tremens in a fatal manner, at a time when it has been least expected, in patients presenting nothing alarming in their symptoms, admonishes us not to be too sanguine in our expectations of recovery. It must be known to all who are accustomed to witness such cases, that occasionally they are cut short by a sudden fit of an epileptic character. The patient becomes more excited, struggles hard to liberate himself, till at length he is convulsed, and ere perhaps medical aid is procured, he is a corpse. This must ever be borne in mind; and we can never feel satisfied as to the state of a patient in delirium tremens till he has had refreshing sleep of some hours' duration, and has lost his fancies and his horrors. It may always be considered favourable if he is willing to comply with the order of his medical attendant, and can be persuaded to take his food and medicine. Excessive tremor and profuse perspiration are both unfavourable symptoms, as they are indicative of a very exhausted condition of the

nervous power, and their very presence tends, of course, to increase it. Under these circumstances it is that stimulating tonics—as, for instance, the Tinct. Gentianæ Comp. with Ammonia—are of use. The weaker the physical powers become, the more do the spectral illusions increase. In the fatal cases of delirium tremens which I have seen, death took place at an early stage of the disorder, with the exception of one patient, who lived between three weeks and a month. I am inclined, therefore, to look favourably on those cases which have passed over the sixth or seventh day, provided, of course, no very unfavourable symptom has arisen, though, in defiance of all ordinary remedies, sleep has not been produced.

In concluding this paper, I must again plead the interest of the subject as an excuse for its length; and, in taking my leave of you for the present, intimate it to be my intention to forward to you any very interesting cases of disease that may come before my notice from time to time, having learnt much myself from the valuable contributions contained in the *MEDICAL GAZETTE*, in return for which I venture to send my humble offerings.

5, Mulgrave Place, Plymouth,
July 15th, 1847.

ON THE THERAPEUTIC EFFECTS OF THE EXTERNAL APPLICATION OF THE ACONITUM NAPELLUS.

BY JOHN GRANTHAM, F.R.C.S.

THOSE ulcers which I have been in the habit of treating with the aconite are of a sphacelated and phagedenic character, occurring in patients of a gouty diathesis, where there is hypertrophy of the ligamentous tissue, and also in those ulcers which often assume a sphacelated action over the region of varicose veins. The sphacelus is most superficial and cutaneous in the varicose limb, and deepest in true podagra; in the latter, composed of an abnormal deposit (according to Wollaston's analysis) formed of the urate of soda, with a little of the urates of potash and lime, chloride of sodium, and animal matter. These ulcerations

are very uncontrollable, and most acutely painful, very difficult to quiet, and still more tardy to heal: such has been my experience, and, instead of finding the means answering the end, the converse has been the result until I adopted the following mode of treatment, which consists in the application of the monkshood. The root, stem, and leaves should be collected when the plant is in flower, and dried in the same manner as recommended in the *Pharmacopœia*, i. e. "in the shade." An infusion should be made of the whole plant, as I have found a decoction of the plant deficient in its efficacy; the liquor should then be carefully strained off, and a poultice made of the fluid with bread, and applied as hot as the part will bear, and the heat maintained by covering the poultice with wadding, and changing the poultice more frequently. It is of no small importance, in treating ulcers, to keep up the natural temperature of the whole limb; there is a normal vitality which is essential to the healing of all wounds.

I wish it to be understood that the above treatment will not at all times possess the same salutary therapeutic action on the part, but am confident it will be found a very beneficial application in such cases I have named, after regulating the general health, viz., by removing congestion of the brain, liver, or intestines, presupposing such may be the case, as I have often seen such a condition of one or more of the visceral organs during the early stage of gouty inflammation. The effects of this dressing will be to enable the living part to throw off the dead matters, and assume a healthy process. The aconite has been used internally by Stoerk in gout and rheumatism, and subsequent authors have written favourably of its effects when taken internally, but its use as an external application does not appear to have attracted the attention of medical practitioners.

Crayford, Kent, July 27, 1847.

MEDICAL APPOINTMENT.

ROBERT BENTLEY, Esq. M.R.C.S. has been appointed to succeed the late Edwin J. Quekett, Esq. in the chair of Botany at the Medical School of the London Hospital.

MEDICAL GAZETTE.

FRIDAY, AUGUST 6, 1847.

In the last number of this journal, we published the correspondence which took place sixteen months since, between the President of the College of Surgeons and Sir James Graham, relative to the issuing of a Supplemental Charter. Our readers will remember that at the period referred to, various rumours were afloat respecting the proposed charter; and in the *MEDICAL GAZETTE*, for February 27th, 1846, we made some remarks upon the subject, showing the necessity for an immediate application to the Crown. From the correspondence, now for the first time published, it appears that the Council of the College soon afterwards applied to Sir James Graham, stating briefly their reasons for the application. An answer was returned, making the issuing of the charter conditional on the introduction of a change in the mode of election into the Council. This recommendation was not followed, and the result is that nothing has been done.

It is only fair to the Council of the College to state that they made a reasonable request in a very reasonable way; and although their proceedings in the matter have been hitherto kept secret, we infer from an examination of the documents, that they were really animated with a *bonâ fide* desire to remedy some of the defects of the charter of 1843. The publication of their resolutions at the time might have saved the Council from much obloquy, but it would probably have had the effect of putting an end to all negotiation on the subject.

The Council, in making this appli-

cation, had in view two objects. Our readers are aware that there are two lists of fellows,—the one containing the names of those who were elected under the authority of the charter, in December 1843, and the other, of those members who were not elected until August 1844. These lists clash with each other, and the Council very properly desire to unite the two, and to place the names of the fellows in the order of seniority according to the diplomas of membership. It is impossible to take exception to this request, and it is only a matter of surprise that when the charter gave power to the College to form two lists of members, it did not at the same time enjoin that the names should be classified on an equitable principle.

The most important resolution, and that which will excite most interest in the profession at the present time, is, the proposed admission to the fellowship by ballot, and without examination, of members of a certain standing. The conditions under which this ballot is to take place may appear more restricted than necessary; but this, we apprehend, is rather because so many junior members of the profession have, under the charter, been made fellows without having undergone examination, and without possessing any particular amount of professional knowledge to entitle them to the honour. They cannot be unmade, and the Council now propose to proceed on a plan which it appears to us they should have adopted in the first instance, *i. e.* seniority of standing in the profession. Had it been made a primary rule in carrying out the original charter, that no person should be eligible to the fellowship who was not of at least twelve or fifteen years' standing, we are satisfied that there would have been much less discontent. It was the preference of young and scarcely known

members, without any special merits to recommend them, over those who had been in practice for years before these juveniles had commenced their medical education, that gave just grounds for universal dissatisfaction. The Council propose to apply a remedy for this grievance by admitting as fellows, on certain terms, those who were members of the College on the 14th September, 1843 (the date of the charter), and who shall be of *twenty years'* standing in the profession. We should have thought that twelve or fifteen years would have been a better period for selection; but we presume that the reason for fixing twenty years is in order to prevent a large and sudden increase in the number of fellows. The old members who accept this offer of the ballot must be able to produce certificates of strict moral integrity, and of high professional acquirements as practical surgeons, from seven members of the College, three of whom shall be fellows, and shall have a personal knowledge of the candidate. If admitted, they are required to pay the same fee as that paid by members who become fellows by examination. It is further proposed that all who were members of the College on the 14th September, 1843, shall take precedence on the chronological list, according to the date of their diplomas as members.

In replying to this application, Sir James Graham commences by hinting to the Council that the time granted by the original charter was long enough for the detection and rectification of all omissions; a proposition which, however, refutes itself in the fact, that the omissions really do exist, and that, in the opinion of the Council, and a large majority of the members, they require rectifying. The late Home Secretary infers that one of the consequences of the application would, by increasing the number of fellows without giving

open proofs of their superior qualifications, tend to lower the grade of the fellowship, and render it less worthy as an object of ambition to those who aim at a high standard of professional education.

This reasoning appears very plausible; but it is necessary to put matters in their true light. The Council find that in selecting the fellows, men of "superior qualifications" have, through inadvertency, been most unjustly overlooked; and we think it would not be difficult to show that men of very inferior qualifications have, of course by mere accident, been preferred to them. The Council have taken care to place the most guarded restrictions on the admission of members without examination; and these restrictions are a sufficient guarantee that members who may become candidates for the fellowship by ballot, are not likely to be men to throw discredit on the title. In our view, while an act of injustice will be to a certain extent removed by their admission, their presence among the Fellows will rather tend to confer additional honour upon the class. Sir James Graham appears to us to overrate the consequences of conceding this privilege to the College. Members of *twenty years'* standing are not so very numerous as he supposes; and the rules of the College would probably reduce the number of those who could become candidates for the fellowship, to at least one-third of the whole. The inconvenience to which it is considered this proposition would give rise, is therefore purely imaginary.

So far as we have yet gone, there appears to be no obstacle to the issuing of the charter; but we now come to the objection which has proved fatal to the scheme. The yearly election of Fellows into the Council follows the order of seniority;

but if the name of an individual be proposed *twice* without election, it is for ever passed over. We confess that this rule has always appeared to us artificial and unsatisfactory. All other circumstances being equal, it is proper to take the order of seniority; but we think that the nomination of members of Council, should not be made to rest upon the accidental position of names; nor does it appear reasonable that because a name has been twice passed over, a Fellow should be disqualified from again offering himself. We are at a loss to understand why such an arrangement should have been made, for it is assuredly not adapted for securing the services of efficient men, since efficiency for such an office is neither dependent upon the position of a name on a list, nor upon the fact that a man ought to be successful on his two first trials. It appears to us that it would be far more equitable to limit the number of names which might be yearly proposed, and to require that candidates for the office should be of at least fifteen years' standing in the profession. This would be giving a proper degree of power to the Fellows, and it would leave them an ample field for the selection of competent men.

It is, then, on the ground of this nomination by rotation, that an objection has been taken to the issuing of the Supplemental Charter. The Council propose, and we think most justly, that every Fellow, whether now such or to be admitted without examination hereafter, should take rank according to the date of his membership. This is a point which it appears to us ought to be insisted on; for nothing could be more preposterous than to place a man of twenty years' standing, and whose name was omitted from the original charter, not through any fault or disqualification on his part, *below* that of

one who had not even commenced his professional studies when the other had completed them! Sir James Graham, however, insists upon this "order of precedence,"—i. e. by date of fellowship, and not of professional standing, being maintained, unless the mode of election into the Council be changed. His objection to the proposition of the Council is, "that, for the next seventeen years, none of the young fellows could calculate with any certainty on his chance of election to the Council; and the unlimited (?) introduction of the certificated fellows, which will probably be received with jealousy by those who come in upon examination, will become a more palpable grievance, and will be more deeply resented." Whether the alteration which he suggests be made or not, we do not believe that, for the next seventeen years, any of the "young fellows" can calculate upon their election into the Council. There are too many before them: and, because they have been admitted with examination, they have no right to complain that older members who have been unjustly excluded, and who would have considered it a degradation to offer themselves for examination before their juniors, have, by a tardy act of justice, been placed in the position which they ought to have had on the 11th December, 1843. It is besides absurd to state that there will be an "unlimited" introduction of certificated fellows,—the fact being that the admission by ballot is so limited as, from this cause alone, to be likely to give rise to some dissatisfaction among the members. If, as Sir James Graham asserts, the examined fellows would view with jealousy those who were admitted without examination, we can only say that the feeling would be very much misplaced:—it would be like the

jealousy of a junior in respect to the elevation of a senior, who had been excluded from an honour by no fault of his own, and who declined seeking it by a course which implied degradation. If Sir James Graham will procure a list of the fellows yet admitted by examination, with the dates of their diplomas as members, we venture to affirm that the majority will be found to be under twenty years' standing in the profession; and they would therefore be unqualified for admission by ballot, under the proposed Supplemental Charter. This alleged grievance, therefore, suggested by the late Home Secretary, is more imaginary than real.

Although we wholly dissent from the reasons assigned by Sir James Graham, we agree in the conclusion, that the mode of election into the Council should be changed. He suggests that the members should be chosen exclusively from those who had been fellows for at least ten years, or fellows and members for at least twenty-five years, and he states that an alteration of this kind is an indispensable preliminary to a new arrangement of the order of precedence among the fellows. We do not see how a different order of precedence than that suggested by the Council can be adopted; and we therefore think that the proposition respecting the alteration in the mode of election, should be well considered. The present method is decidedly objectionable, and, so far as we know, has not a single reason in its favour, except that it apparently gives to all fellows a chance of election in turn. This chance of election should, however, in our opinion, rest upon some stronger basis than mere numerical rotation.

We also decidedly object to the proposition on the part of the Council, that members of twenty years' standing, who become fellows by ballot, should

pay the same fee on admission as those who were admitted by examination. This can only be regarded in the light of a fine. We are at a loss to know why they should pay for a title which men of inferior standing and attainments obtained gratuitously, in 1843; either by mistake, by mere accident, or by the industrious and timely exertions of influential friends!

We do not think that Sir George Grey would be found more obdurate than Sir James Graham; and although a long time has elapsed since this correspondence took place, we trust that having by their application shown the urgent necessity for a Supplemental Charter, the Council will not relax their efforts to obtain it. The only plans, so far as we can see, which are open to them, are—1st, to remain in *statu quo*, which is decidedly objectionable when it is now proved that there are defects in the Charter, which, as they themselves admit, require removal. 2nd, to demand an entirely new Charter, and to nominate the fellows on more equitable principles, retaining only on the list, as *de jure* fellows, those who have become so by examination, and giving them precedence according to the dates of their diplomas. Would this be unjust to those whose names are on the present lists?—assuredly not. Under a legal limitation of the number of fellows, there are some who occupy the place of others who have been improperly excluded; hence it is a mere act of justice that such a transposition should be made. A man cannot be said to lose a title conferred on him by a mistake,—to which he had no definable right; and after all, the injustice of summarily displacing those who have been thus chosen, is assuredly not so great as the continued exclusion of others who have a stronger claim to the fellowship. There may be

legal obstacles in the way of the adoption of this plan, but we prefer it, because it is like the excellent legal remedy for all acts of injustice,—a *venire de novo*. When there was once a removal of the old Charter—a *tabula rasa*,—the Council would be better able to profit by the experience of the past, and make a selection of fellows upon more equitable principles. 3rd, The only other plan open to them is to adopt the suggestion of Sir James Graham,—alter the mode of election, and act under a Supplemental Charter. This may not be a perfect remedy, but it will, at any rate, tend, in some degree, to remove the grounds of dissatisfaction created by the Charter of 1843.

Reviews.

The Nature and Functions of the Sympathetic Nerves. By JOSEPH SWAN, Esq. pp 55. Longman and Co., London, 1847.

THE numerous valuable publications on the sympathetic nerve, which have from time to time been put forth by the author of this essay, must always secure to Mr. Swan a place among the many distinguished anatomists of the nineteenth century, whose labours have been devoted to the task of displaying the complicated structure and mysterious physiological influences of the nervous system. The present memoir appears to be intended as a supplement to the author's previous works on the sympathetic nerve: it contains many interesting anatomical facts, and some ingenious, but perhaps not altogether indisputable, physiological opinions. It is, however, to be regretted that the author, unlike the generality of modern writers on anatomy, does not always adhere to that clear and terse descriptive style which is alone suited to the narration of distinct matters of fact and plain opinions.

The following extract, containing a brief sketch of the anatomical arrangement of the sympathetic system of nerves in the four great classes of the vertebrata, will, we think, prove suf-

ficiently interesting to our readers to induce them to inquire still further into the author's views respecting the comparative influence exerted by this system in the several classes of animals.

"*Mammalia.*—In man and mammalia, if the parts connected with the head be inquired into, without any reference to mere prominences of bone, it will appear that there is the largest cervical ganglion in proportion to the nerves it usually communicates with, but that it corresponds more with some branches of the carotid artery, and especially those supplying the nose and palate, than with any other parts connected with the head and face that it can be compared with. There is the largest superior thoracic ganglion in proportion to, and for supplying, the vertebral artery, and for communicating with the cervical nerves. The thoracic ganglia are generally large in proportion to the intercostal nerves; they are so for supplying the aorta and intercostal arteries, and particularly for supplying the vascular rete in the porpoise, as far as the middle of the thorax, but not lower down; also for connecting the nerves of the lungs with those of the respiratory muscles, and for forming the splanchnic nerves, which are conveniently concentrated in the large semilunar ganglion for supplying the extensive viscera. The lumbar ganglia are large when a great amount of branches is sent by them to the viscera and the aortic plexus, or when the spinal nerves require to be freely connected with the heart, for insuring a greater quantity of blood to the parts they supply. The sacral ganglia vary in size in man and different animals; they bear a large proportion to the spinal nerves and the extremities, and therefore, as well as on account of the small quantity of the vascular rete, do not exist, or are extremely diminutive, in the porpoise. They give very small branches to the arteries and ligaments, fat, and absorbents, but very large ones to be combined with the sacral nerves, and through them with the arteries of the limbs. The single ganglion exists for connecting the two cords together; in animals with tails it is largest, and is often repeated lower down in the tail.

"*Birds.*—In birds, the small superior cervical ganglion connects the several nerves it communicates with; its proportion corresponds most with the branches of the fifth, and the arteries of the nose and palate. The usual prolongation accompanying the carotid artery is small; the more principal cord accompanies the vertebral artery, and is attached by a small ganglion to the anterior trunk of each cervical nerve, and the whole number, in proportion to the spinal marrow, is more than equivalent to the large superior thoracic ganglion of mammalia, some al-

lowance being made for the number in different birds. The ganglia of the thoracic portion are united with more or fewer thoracic spinal ganglia below the first, according to their number, so that they unite with six in the swan, and four in the golden eagle, and send off branches which form an extensive plexus at the sides of the vertebrae, resembling that of the splanchnic nerves in man, but it is more connected with branches of the intercostal arteries; from this plexus, in connection with the sympathetic and spinal ganglia, the small semilunar ganglia convey their power to the viscera, and communicate with the nerves of the opposite side on the omic and superior mesenteric arteries. Larger thoracic ganglia and smaller semilunar do not probably differ much from the reverse order which takes place in mammalia, and could not be so well accommodated birds. The other ganglia, corresponding with the lumbar and sacral, communicate with the spinal nerves by small branches; the ganglia are small, but proportionate to the uses of the kidney, lower part of the intestines, the arteries, and spinal nerves.

Amphibia.—In amphibia, the snake has only the superior cervical ganglion, and the palatine, distinct and fleshy, while all the rest are plexiform. There is not a ganglion in the place of the superior cervical in the turtle, but similar branches to the vidian, and others pass upwards for the same purpose, as if they proceeded from a ganglion. From the extensive membranous superior thoracic ganglion in the turtle, branches are sent to join the cervical nerves. In the alligator, corresponding branches pass from numerous small ganglia attached to a prolongation in the vertebral canal, as in birds, but do not adhere to the cervical nerves as in them, but only communicate by branches. In other respects, the thoracic portion in the turtle, and alligator, and crocodile, is similar to that in birds. The splanchnic nerves are large, but are derived from very small ganglia, or from only small plexuses attached to a slender prolongation. In mammalia, if the ganglia in the prolongation are very small, the prolongation is large, but in amphibia it is small.

Fishes.—In fishes, the first distinct ganglion sends up a branch to join the fifth and par vagum, and after the splanchnic nerves are given off, the prolongation and its ganglia are continued downwards to communicate with the spinal nerves, give off the spermatic, and pass on each side of the aorta to the tail."

Medical Trials and Inquests.

MEDICAL EVIDENCE IN A CASE OF POISONING BY ARSENIC.

We extract the following from the report of a trial (for poisoning) of a woman named Lennox, which took place at the Newcastle Assizes, on Friday last. While the evidence reflects credit upon the witnesses, it gives a fair outline of the course of examination adopted on these occasions. The woman was charged with poisoning her husband by arsenic. She was proved to have gone to one shop to buy poison under the pretence of destroying rats; and at another, where she succeeded in procuring an ounce, she stated that it was for destroying bugs. On the same day she was proved to have made a pudding for her husband, which he ate for his dinner. By a very remarkable coincidence, the man was soon afterwards attacked with symptoms of poisoning by arsenic, under which he sank; and by an equally singular coincidence, arsenic, as the medical evidence shows, was unequivocally detected in the body! The counsel for the prisoner suggested this was one of those "strange and unaccountable accidents" which every now and then occur; and he contended that there was no *conclusive proof that the deceased had died from the effects of arsenic at all!* We object both to his logic and his chemistry, but on these matters we leave our readers to decide for themselves. The woman was of course acquitted.

Dr. FENWICK.—Is a doctor of medicine at North Shields. Had seen deceased April 7th, 1846, for the first time. He complained of purging, which he had had for nine months. He did not complain of much pain. Continued under witness's care 17 days. He then said he had been well for nearly a week. Never saw him alive again. It was a little after 7 o'clock on the 3d of July witness saw him. He was then dead. Assisted Dr. Coward at a *post-mortem* examination on the 7th. Examined the cavities of the head, chest, and bowels. The appearance of the stomach, and the upper part of the small intestines, showed inflammation, chiefly in the stomach, and becoming less as they proceeded lower down. There was congestion of the lungs. There was disease of the heart and the vessels proceeding from it. The liver was rather diseased. The heart was greatly enlarged. The large vessel had a bony deposit. The other arteries were, generally speaking, in a diseased condition. Should say some irritant poison had been the cause of death. Applied some tests to the contents of the stomach which induced witness to believe

that arsenic was present. Took away the stomach and duodenum, and the contents of each, separately. They were left in the care of Mr. Coward. Could not form an opinion of the time the poison had been taken before death. *Cross-examined.*—The liver was attached to the bowels. Purgings may accompany inflammation of the bowels. Most commonly there is constipation. Inflammation of the stomach is very rare. Brown patches on the stomach are usually found in cases of poisoning by arsenic. The inflammation is usually localized. In other cases there is diffused or general inflammation. In a recent case one does not expect inflammation of the oesophagus. Did not in this case examine it. Violent pain usually accompanies death by arsenic. It may take place without any pain. In many cases there are convulsions; not generally. In most instances the death is a severe one, unless coma comes on. The brain in this case presented no appearance of disease.

Mr. HENRY COWARD.—Is a surgeon at North Shields. Assisted Dr. Fenwick in opening the body of the deceased. Witness gave the stomach and its contents to Dr. Glover. Agrees generally with the testimony of Dr. Fenwick. *Cross-examined.*—The inflammation might be produced by natural causes, or it might be produced by an irritant poison. Gave the contents of the stomach to Dr. Glover in a stoppered bottle. Got the bottle from the surgery. They were washed out with distilled water.

Dr. ROBERT MORTIMER GLOVER.—Is a doctor of medicine, and a lecturer on medical jurisprudence in the medical school of Newcastle-upon-Tyne. Received the stomach and the duodenum, and the contents, from Mr. Coward. The stomach was intensely inflamed, and there was an appearance of yellow powder. It was in very small quantity—mere specks. Took the contents of the stomach and boiled them with a little acetic acid. Filtered the liquid, and applied trial tests. Passed sulphuretted hydrogen through one portion of the fluid. Obtained a yellow precipitate. Added the ammoniaco-nitrate of silver to another portion, and obtained a yellow precipitate. Added the ammoniaco-sulphate of copper to another portion, and obtained a greenish colour with a slight precipitate. The results of these experiments satisfied witness that arsenic was present. One of these precipitates was sulphuret of arsenic or orpiment; the others would be arsenites of silver and copper. Took another portion of the filtered fluid, added a little muriatic acid, having previously tested it; boiled it with small pieces of copper, which became black. Took the pieces of copper and dried them carefully,

heated them in a test tube, and obtained a sublimate composed of a metallic-like film, and a white rim above the metallic film. Examined the ring with a microscope, and discovered octohedral crystals with triangular faces; these were crystals of arsenious acid. Took the stomach and intestines, and cut them in pieces; boiled them in water and acetic acid, filtered the fluid, and tested it in a Marsh's apparatus. Obtained distinct arsenical stains. Produces them. They are a little fainter than at first; the stains of antimony are black. These stains show that the fluid contained arsenic. Tried these experiments twice; once with a new apparatus. There was no doubt of the presence of arsenic; it must have been in some quantity. *Cross-examined.*—Will not say positively there was more than a grain; thinks it probable there was more. In Marsh's test used zinc and sulphuric acid. Zinc contains arsenic; sulphuric acid does when it is made from pyrites; arsenic is a component part of glass. Would always wish to use Marsh's test in conjunction with others; would not wish to trust to it alone; it may be used so as to be free from any doubt. Water was used in boiling the contents of the stomach; the filtered liquid was mixed with organic matter. The liquid tests, except sulphuretted hydrogen, are unsafe to trust to alone, where there is animal matter present to any considerable extent. Cadmium would produce the same appearances as arsenic when tested with sulphuretted hydrogen. Arsenic gives a totally different precipitate. Does not think tin would give similar appearances as arsenic. Never tested it with that view. Orfila was once of opinion that arsenic existed in the bones. Believes he has since retracted that opinion. The stomach did not present any very characteristic mark of arsenical poisoning. It presented appearances which arsenic might well cause, but which are not peculiar to it.

In answer to questions from the JURY, the witness said he did not rely much on the trial tests. They were used in conjunction with others. The conclusive test is Reinach's, producing the peculiar crystals of arsenic.

Re-examined.—The arsenic found did not proceed from the zinc—the sulphuric acid—or the glass. Witness tested the apparatus while it was working, and there was no arsenic present before the contents of the stomach were introduced.

Medical Intelligence.

ASIATIC CHOLERA.

THE Indian mail, just arrived, announces, in letters from Dinapore, that the cholera was ravaging Her Majesty's 98th Regiment; 64 persons died in the month of May; there were 170 in the hospital daily. According to recent intelligence, published in the *Gazette of Augsburg*, the Asiatic cholera was still prevailing at Tifis, where it has occasioned many deaths.

FULMINATING MANNITE.

THAT peculiar kind of sugar which is obtained from manna, and which gives the sweet flavour to celery and asparagus, has been lately converted by M. Sobrero into a highly fulminating compound. Although the process is not published, there is no doubt that, like fulminating cotton, the conversion is effected by the agency of sulphuric and nitric acids. It detonates by percussion as violently as fulminating mercury, and produces, during explosion, sufficient heat to ignite gunpowder. M. Sobrero has employed it as a substitute for fulminating mercury in percussion-caps. He found that a small quantity of mannite, crystallized from alcohol, and thus employed, discharged a gun as effectually as if fulminating mercury had been used. Further experiments are, however, required to show whether the mannite can be safely and economically substituted for mercury in the manufacture of percussion-caps.

A PRESERVATIVE AGAINST SYPHILIS.

It is announced in a late number of *L'Union Médicale*, that a M. Debrose professes to have discovered a method of preservation against attacks of syphilis. The inventor states "that any part plunged for five minutes in the prophylactic liquid may be exposed with impunity to the contact of mucous membrane impregnated with the virus of syphilis." A mercantile house has made a proposition to the Government of Spain on the subject; and it has been so far seriously entertained that the Government has referred the question to the decision of the Academy of Medicine and Surgery of New Castile. While the discussion was proceeding (with closed doors), a Dr. Lafond, of Bayonne, accompanied by a member of the commercial house in question, appeared before the Academy, and read a memoir on the success which had attended the use of Debrose's liquid, stating that it was an astringent preparation. A committee was therefore appointed to inquire into the matter; and according to the latest intelligence, the members of this committee were

busily engaged in carrying out their investigations on this curious subject.—*L'Union Médicale*, Juillet 31.

ALLEGED RAPE PERPETRATED ON A FEMALE WHILE UNDER THE INFLUENCE OF ETHER.

THAT which had been suspected as a probable result, on the introduction of the new narcotizing agent, has, according to the *Gazette Médicale*, actually occurred in Paris. Last week a female went to a dentist to have a tooth extracted. He advised that it should be stopped; and, to avoid the pain of the operation, recommended his patient to inhale the vapour of ether. What passed while the female was under the influence of the vapour may be inferred from the following facts:—The young female was observed to leave the dentist's house about three hours after she had entered it, in a very disordered state. This attracted the attention of her employer, who could not account for her long absence. The injured party, notwithstanding the stupefying effects of the ether, retained some recollection of what had passed, and, from some words which fell from her, suspicion was immediately excited. She was examined by a physician, who reported that her person had been violated. The dentist has been arrested, and is about to be prosecuted for the offence.—*Gaz. Méd.* 31 Juillet.

A NEW CURE FOR NERVOUS AFFECTIONS.

M. PALLAS considers that the cause of a great number of "nervous affections" is to be found in the excessive influence of atmospheric or terrestrial electricity. He states that, by adapting to bedsteads glass feet, and isolating them at about eighteen inches from the wall of the apartment, he has cured the patients sleeping upon them of a host of nervous affections.

. The impression produced on the mind has probably as powerful an influence in the cure as the insulation on glass.

STATISTICS OF SUICIDES IN PARIS.

By a criminal Report, for the year 1845, just published, out of 11,049 deaths, there were 3084 cases of suicide,—being 111 above the number for 1844, and only 64 above that of 1843. Of the 3084 suicides, there were 2332 males and 725 females. Sixteen males and four females had not reached their sixteenth year. Among the number were children of 7, 8, and 10 years. There were—

From 16 to 21 years	123
From 21 to 30 "	462
From 30 to 50 "	1201
From 50 to 70 "	945
From 70 to 80 "	203
More than 80 "	41

Taking the months of the year, there were of suicides in

SUMMER.—June, July, and August . . .	922
SPRING.—March, April, and May . . .	861
AUTUMN.—Sept. Oct. and Nov. . . .	756
WINTER.—Dec. Jan. and February . .	545

According to the means of perpetration, there were—

By hanging	1110
„ drowning	995
„ fire-arms	432
„ suffocation by charcoal vapour . .	213

The last mode of self-destruction is exceedingly prevalent in the department of the Seine.

The motives were those usually met with—love, jealousy, debauchery, reverse of fortune, domestic misery, and physical suffering.—*Gaz. Méd. Juillet 31.*

UNIVERSITY OF LONDON.

M.B. FIRST EXAMINATION. PASS EXAMINATION.—1847.

Monday, August 2.—Morning, 10 to 1.

Anatomy and Physiology.

Examiners.—Mr. KIERNAN, and Prof. SHARPEY.

1. Describe the Astragalus and Os Calcis (mentioning the surfaces for the attachment of ligaments and muscles, and the grooves for the passage of tendons), their articulations and connections with each other and with other bones, and the movements which take place in the several joints into the formation of which they enter.

2. Commencing at the integuments, describe the parts met with in dissecting a portion of the front surface of the arm and forearm, bounded above by a transverse line drawn three inches above the bend of the elbow, and below by a line crossing the insertion of the pronator teres. The dissection to be carried to the bones.

3. Commencing at the integuments, give the dissection required to display,—1st. The course of the external carotid artery, from its commencement to its division into the internal maxillary and temporal arteries, pointing out its relations to other parts. 2nd. The course of the lingual artery and its branches, describing all the parts met with in the course of the dissection.

4. Give the anatomy of the nose, describing its bony parietes, its cartilages, the different canals communicating with its cavities, its lining membrane, its blood-vessels, and nerves.

5. In what respects do congenital, oblique, and direct inguinal hernie differ from each other with regard to their mode of formation, and their relations to the inguinal canal, the spermatic cord, and the epigastric artery?

Afternoon, 3 to 6.

Anatomy and Physiology.

Examiners.—Mr. KIERNAN and Prof. SHARPEY.

1. Give a description of the stomach; including its form, dimensions, relative situation, and connections; the nature and arrangement of its several coats, with the glands which open on its inner surface; the construction of its pyloric orifice, and the situation and mode of distribution of the vessels and nerves of the organ. Mention the leading constituents and most characteristic properties of the gastric juices, and describe briefly the changes which the food undergoes in the stomach.

2. Describe the origin, course, and distribution of the external and internal plantar arteries; stating the steps of the dissection required to expose them, and describing the relative situation of the several parts successively brought into view.

3. Give the dissection required to bring into view the origin, course, and distribution of the transversalis humeri (suprascapular) and transversalis colli arteries; describing the situation, relatively to the arteries and to each other, of the several parts which must be exposed in the dissection.

4. The abdominal muscles and the ossa pubis being removed, describe the pelvic viscera as they are seen *in situ* in the male; and opening the bladder, and the urethra through its whole length, describe the dimensions of the latter in its different portions, and the internal surface of both, and also the appearances of the surface of the divided cavernous and spongy bodies. Continuing the dissection from above downwards as far as the rectum, describe the parts situated between it and the bladder.

5. Give an account of the form, situation, and internal structure of the trachea and of the bronchi as far as the point where they enter the lungs; describing their relations to adjacent parts.

Tuesday, August 3.—Morning, 10 to 1.

Chemistry.

Examiner.—Professor BRANDE.

1. State the specific gravities and the atomic weights or equivalents, upon the hydrogen scale, of the following metals, and give the symbols of their several oxides.

Potassium.	Antimony.
Iron.	Arsenic.
Tin.	Manganese.
Lead.	Mercury.

2. Represent in symbols the ultimate and the supposed proximate composition of the *ferricyanide* and of the *ferridcyanide* of

potassium, and explain their respective actions upon the salts of iron.

3. What are the ultimate elements of albumen, and how are those elements *qualitatively* and *quantitatively* determinable?

4. Give the composition of *uræ* and of *uric acid*, and describe the principal metamorphoses of those substances.

5. You are requested to name the salt held in aqueous solution in the bottle marked A, and in that marked B. They are inorganic salts, and are accompanied by adequate tests for their recognition.

Afternoon, 3 to 6.

Materia Medica and Pharmacy.

Examiner.—Dr. PEREIRA.

1. You are required to describe the mode of preparing tartaric acid, to explain the successive steps of the process; to state the composition; saturating power, and chemical characteristics of this acid; and to point out the method of detecting the adulteration of powdered tartaric acid with cream of tartar, and of powdered citric acid with tartaric acid.

2. Enumerate the officinal gum-resins obtained from the natural order *Umbelliferae*: describe the methods of obtaining them, their chemical composition and characters, and their medicinal properties, uses and doses.

3. With what indigenous plants is hemlock liable to be confounded, and how would you distinguish it?

4. What are the ingredients of which the following preparations are composed:—*Extractum Colocynthis compositum*, *Decoctum Aloës compositum*, and *Pilula Rhei compositæ*?

5. Describe the most appropriate method of combating poisoning by oil of vitriol, white arsenic, oxalic acid, and opium.

6. Briefly state the effects, uses, and doses of the following substances:—*Elaeterium*, *strychnia*, *savine*, and *bichloride of mercury*.

Afternoon, 3 to 6.

Botany.

Examiner.—Rev. Prof. HENSLOW.

1. Define, and give examples (where the case admits) illustrating the following terms:—*Samara*, *Epigynus*, *Oppositas*, *Convolutus*, *Umbella*, *Tuber*.

2. Give diagnoses of the following Orders:—*Convolvulaceæ*; *Amentaceæ*; *Liliaceæ*.

3. State the more important characters in the following genera, and describe the floral whorls, fruit, and seed in each:—*Dianthus*; *Daucus*; *Mercurialis*; *Fritillaria*.

UNIVERSITY OF LONDON.

MATRICULATION.—1847.

EXAMINATION FOR HONOURS.

Mathematics and Natural Philosophy.

Routh, E. J. (Exhibition), University Coll.

Edger, E. R., University College.

Bridge, J., University College.

Gillett, J., Private tuition.

Malleson, W. T., University College.

Clare, J., Stonyhurst College.

Giles, W., St. Edmund's College, Ware.

Bamber, J., St. Edmund's College, Ware.

Johnson, J., Stonyhurst College.

Odling, William, Guy's Hospital.

Ray, J., Wesleyan Coll. Inst., Taunton.

Chambers, B. E. C., Wesley Coll. Sheffield.

Chemistry.

Neale, R. (prize of books) University Coll.

Betts, N. P., University College.

Sawyers, J., King's College, Aberdeen.

Chambers, B. E. C., Wesley Coll., Sheffield.

Payne, W., University College.

Fryer, W. H., Queen's College, Birmingham.

Beale, L. S., King's College.

Zoology.

Neale, R. (prize of books) University Coll.

Beale, L. S., King's College.

Odling, W., Guy's Hospital.

Classics.

Pringle, G. (Exhibition) St. Edmund's College, Ware.

Davies, E. C., Homerton College.

HONOURS CONFERRED ON M. ORFILA AND
BARON BERZELIUS.

THE King of the Belgians, being desirous of conferring some mark of distinction on M. Orfila, for the eminent services which he has rendered to science, has created him an Officer of the Civil Order of Leopold.

At the meeting of the Scientific Congress of the Scandinavian Naturalists at Copenhagen, on the 19th July, the King of Denmark conferred on Baron Berzelius the Grand Cross of the Order of Dannebrog—a dignity to which is attached the title of Excellency.

Selections from Journals.

PHYSIOLOGY.

FUNCTIONS OF THE SPINAL CORD.

SOME curious results have been afforded by an ingenious set of experiments performed by M. Brown-Séquard for ascertaining the degree of motor power left in the spinal cord after separation from the brain, com-

pared with the power which can be exerted while its connexion with the brain is left uninjured. The process which he employed for ascertaining this consisted in suspending from the extremity of one of the posterior limbs of a frog a light weight, sufficient to keep the limb stretched; and then pinching one of the toes, whereupon flexion of the limb with its attached weight was excited. By increasing the suspended weight until it amounted to more than the animal by its attempts at flexion of the limb could move, a tolerably correct estimate might be formed of the degree of voluntary motor power the frog was capable of exerting. Having determined this, he divided the spinal cord below the origin of the second pair of nerves, and then observed the effect which such division had on the motor power of the limb. Immediately after the division, he finds that sometimes the motor power is for the time quite lost, although there generally remains about one-quarter or one-third of what there was before the operation; at other times there is left about one half, or even, though very rarely, as much as two-thirds. A frog, for example, which before the operation could raise a weight amounting to 60 grammes, would not be able immediately after it, to raise any weight at all, or one amounting to 10, 20, 30, or 40 grammes, but not so much as 60*. In five minutes after the operation the motor power is sensibly increased, and usually amounts to one-third, one half, or even two-thirds of its original amount. In fifteen minutes it has increased still more; and in from twenty to twenty-five minutes generally amounts to what it was before the operation. In an hour after the operation its original amount is sometimes doubled, and in two or three hours it is often trebled. Arrived at this degree, the motor power appears to cease from further increase, though sometimes it does not attain this, which may be regarded as its maximum, until twenty-four hours after the operation; and sometimes it is two or three days in attaining it: but in all such cases, the increase is very slow after the first few hours succeeding the operation. When once attained, the maximum motor force remains stationary for five, ten, fifteen, or twenty days, and then gradually diminishes. If the frog survives the operation for some months, the motor force is reduced lower than it was before the operation. But probably if the animals were well nourished, and if movements of the hind limbs were frequently excited, this diminution would not take place,—or, at any rate, not to so great an extent.—*Comptes Rendus*, Mai 10, 1847.

* A gramme is equal to 15½ grains.

PATHOLOGY.

ORGANIC DISEASES IN THE LOWER ANIMALS.

THE following interesting facts are a few of M. Heusinger's observations with regard to the diseases of the lower classes of animals, and are quoted from a valuable article in the *Medico-Chirurgical Review* :—

"The first and second dentitions are dangerous periods for animals as well as for mankind. If we are to believe Shaw, the traveller in Barbary, not a few young lions die from this cause; certain it is that the greater number of orang-outangs die off in captivity during the period of dentition; many of our domestic animals, horses and dogs, for example, suffer a great deal at this period.

Salivary lithiasis, or the formation of the calculi in the salivary ducts, is more common in some of the lower animals than in man.

M. Heusinger remarks, in reference to *dyspepsia* in animals, that "inaction of the first stomach is often observed in ruminants, and that the benefit derived from the internal use of muriatic acid is very striking.

Perforations of the stomach by ulcers and mortification are not unfrequently found in dogs and horses; but we are not aware that any appearance, exactly similar to the *gastro malachia*, or gelatiniform softening that is apt to occur in young children, has been ever observed; although solution of the stomach after death is often noticed in rabbits and other animals.

Lithiasis gastrica.—In the human subject, biliary concretions have sometimes, though very rarely, been discovered in the stomach. As to gastric calculi of any other sort, we have no satisfactory evidence that such have ever been found. In the stomach of the dog, however, and still more frequently in that of the horse large calculi have been often met with. Their mode of formation is not quite understood; they usually contain a little silica; in the case of ruminants, they seem to be formed by a mass of hairs agglutinated together.

Diarrhœa is quite as common in young animals, while teething, as in children during the same period.

Dysentery sometimes prevails, more especially in warm climates, as an epizootic and enzootic, as well as epidemic and endemic malady; it is often very destructive to the brute creation.

Torsion, or *twisting of the gut*, is much more frequent in the horse than in the human being; in the latter, it almost always takes place in the flexure of the colon; in the former, it is usually in the free part of the colon, or in the cœcum itself; the attack is generally fatal. It has been proposed

to cut into the cavity of the abdomen and unravel the twisted fold of intestine; but we are not aware whether the operation has ever been performed.

Rupture of the intestine is a not very unfrequent accident in cows and horses, being generally the result of obstinate constipation, the presence of calculi, or of a twisting of the tube. Most of our domestic animals are liable to *prolapsus ani*; and even *stetula* in this part is not very rare among dogs and horses. Various species of *hernia* are met with in the lower animals.

Congenital umbilical hernia is almost as common among them as in man; it is most frequent in the pig. Although the inguinal canal remains permanently open in animals, hernia at this point is of exceedingly rare occurrence; the ventral species is much more frequent. Diaphragmatic hernia is common, especially in the horse: in many instances, probably, it is of congenital occurrence.

Different morbid affections of the *spleen* appear to be far from uncommon among animals; more especially in hot and marshy climates; indeed, whenever they are endemic they are apt to be enzootic. This viscus is often found to be enormously distended with blood; at other times it is decidedly inflamed, or hypertrophied, or softened, or reduced to a pulpy consistence, or occupied with tubercular deposits, or hydatidic formations; occasionally it becomes ruptured. What we have said respecting the spleen is equally applicable to the *liver*. There is a peculiar form of acute hepatitis, inducing excessive softening of the hepatic parenchyma, which often proves very fatal to sheep, (hepatite typhæse, putride, leber-typhus). *Icterus* has been frequently noticed in the dog, swine, and sheep; it is rare in the horse.

Enlargement of the Thyroid Gland, though not so common as in man, is far from being unfrequent in some animals,—in the dog, for example; it is enzootic in those countries where it is endemic among the inhabitants.

Scabies occurs in all our domestic animals, and in all the scabious insect has been discovered to exist. Hertwig has proved by numerous observations the transmission of the disease not only from one animal to another, but also from an animal to the human being. The facility of transmission, however, appears to be the greatest between animals of the same species.

Diabetes, or *hydruria*.—This is a common complaint in horses. Hitherto no saccharine matter has ever been detected in the urine of these or of any of the inferior animals.

Albuminuria has been observed in the horse by Messrs. Clagworth and Percivall.

Puerperal metritis is perhaps as common among the lower animals as among women. Oopharo-metritis is also the most frequent form of the disease; the affection of all the serous membranes, and especially of the pia-mater, is a common complication. If, on the one hand, veterinary practitioners have not sufficiently distinguished all the forms of the malady—for example, uterine phlebitis—it must be admitted, on the other hand, that they have not allowed themselves to be so much led away by merely fanciful speculations, as some of the recent writers on puerperal fever in Germany have done.

Uterine polypi are frequent in the mare and cow. *Scirrhus* and *cancerous degeneration* of the womb has been seen in the cow and bitch. *Prolapsus uteri* is often met with in our domestic animals, and rupture of this organ is not very unfrequent.

The *mamma* or teat in animals is not unfrequently the seat of scirrhus and cancerous disease. The alterations of the milk, in various morbid conditions, appear to be very much the same in both. All our domestic animals are subject to contagious discharges and ulcerations of the generative organs: they are transmissible by coitus, and exhibit a resemblance to syphilitic affections, although they certainly do not proceed from them, as some writers have imagined. They have been described under the names of syphilis, frambæsia, &c. In my opinion, says M. Heusinger, they are nearly in the same condition as the syphilitic affections of man were before the close of the 10th century.

Hydrorachitis, or dropsy of the spinal marrow, occurs much more frequently among many of the lower animals than in our own species. It is often congenital among lambs. An effusion of purulent matter within the spinal canal has been repeatedly found in horses. Inflammatory *ramollissement*, too, of the medulla is not an unfrequent affection.

Paralysis is a common disease among brutes. A singular epizootic malady of a paralytic nature is that which in Germany was called *sterzwuren*, or *sterzseuche*, but which now appears to be scarcely known to veterinarians in the present day. It has been very improperly designated *epizootia cancræosa* by Ampach, and regarded by him as being of a gangrenous nature. The gangrene of the tail that takes place is only a secondary, and not a primary symptom. From the descriptions that have been given of the disease, we may suppose that it was a (perhaps rheumatic) paralysis of the tail.

Tetanus is a disease that is singularly frequent in horses: it is of rare occurrence among other domestic animals. *Epilepsy* is most frequently observed among dogs, cats, and birds. *Chorea* also has been wit-

nanced in dogs.—*Med. Chir. Review: from Housinger's Recherches de Pathologie.*

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	29.80
" " Thermometer	63.1
Self-registering do. max. 74.4 min. 37.2	
" in the Thames water — 73° — 66.5	
a From 12 observations daily. b Sun.	

RAIN, in inches, '02: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 71° above the mean of the month.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, July 24.

BIRTHS.	DEATHS.	Av. of 5 Sum.
Males.... 635	Males.... 477	Males.... 479
Females.. 575	Females.. 428	Females.. 461
1210	905	940

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—Registrars' Districts, 139.
Population, in 1841, 1,915,104.)

West—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,336)	153
North—St. Marylebone; St. Pancras; Islington; Hackney	193
Central—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London	137
East—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar	180
South—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich	222
Total	905

CAUSES OF DEATH.

ALL CAUSES	905	Av. of 5 Sum. 940
SPECIFIED CAUSES	905	935
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	241	226
2. Dropsy, Cancer, &c. of uncertain seat ..	116	103
3. Brain, Spinal Marrow, Nerves, and Senses ..	127	157
4. Lungs and other Organs of Respiration ..	202	226
5. Heart and Bloodvessels ..	29	25
6. Stomach, Liver, and other Organs of Digestion ..	96	94
7. Diseases of the Kidneys, &c. ..	8	8
8. Childbirth, Diseases of the Uterus, &c. ..	17	10
9. Rheumatism, Diseases of the Bones, Joints, &c.	5	7
10. Skin, Cellular Tissue, &c.	2	2
11. Old Age	34	50
12. Violence, Privation, Cold, and Intemperance	29	28

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	25	Convulsion	22
Measles	34		
Scarlatina	18	Bronchitis	24
Whooping-cough ..	15	Pneumonia	28
Typhus	57	Phthisis	130
		Dis. of Lungs, &c. ..	19
Dropsy	12	Teething	8
Sudden deaths ..	6	Dis. Stomach, &c. ..	4
		Dis. of Liver, &c. ..	14
Hydrocephalus ..	26		
Apoplexy	18	Childbirth	12
Paralysis	16	Dis. of Uterus, &c. ..	2

REMARKS.—The total number of deaths was 25 below the summer average.

NOTICES TO CORRESPONDENTS.

"A Subscriber from the beginning."—The course of lectures which stands next for publication, is that of Dr. G. E. Day. The first lecture will appear on the 30th instant.—Dr. Lee has requested that the publication of his lectures on the Diseases of Women, may be for the present postponed.

Dr. Dick.—The paper will be inserted either in the next or the following number.

Dr. G. B. Clark's cases shall have early insertion.

Owing to the great length of the lectures inserted in the present number, we have been unavoidably compelled to postpone several communications until next week.

The concluding portion of Dr. Adams's paper will appear in the following number.

We are obliged to a correspondent for sending us a copy of the North British Mail, but we have been unable to find in it any article calling for notice in a medical journal.

Mr. W. R. White.—The two communications have reached us. The article referred to will especially receive our attention: we had marked it for notice.

We have received Dr. Eiam's concluding paper on Diabetes. We regret that some delay has arisen in the publication of the first. We will make arrangements to insert them in consecutive numbers.

We shall be much obliged to our old correspondent Mr. W. F. Daniell for his paper.

Mr. H. W. Rumsey.—It is, we think, a sufficient answer to our correspondent to say, that Lord Clancarty's proposition was at once negatived. Had it been reasonable, just, or humane, it would have met with a different reception in the House of Lords.

Dr. C. H. Jones's interesting paper will be inserted.

The Report of the Manchester Pathological Society will appear next week.

ERRATA in Dr. Adams's paper on the Placenta, No. 1026:—P. 195, c. 1, l. 16, for "when shut," read "upon sheep"; and c. 2, l. 2, for "elementary," read "alimentary."—P. 196, c. 2, l. 39, for "Mayor," read "Mayow."—P. 197, c. 2, l. 25, for "opinionum," read "opinionum"; c. 26, for "conformat," read "conformat"; and c. 46, for "Aristophus," read "Aristippus."—P. 198, c. 1, l. 16, for "would not they," read "they would not."—Ditto, note, for "Cleve and Margot," read "Clerc and Margot."

Lectures.

LECTURES
ON THE
DISEASES OF INFANCY AND
CHILDHOOD,

Delivered at the Middlesex Hospital,

By CHARLES WEST, M.D.

Physician-Accoucheur to, and Lecturer on Midwifery at, the Middlesex Hospital, and Senior Physician to the Royal Infirmary for Children.

LECTURE VIII.

Chronic hydrocephalus—Various conditions under which fluid collects in the skull—chiefly a disease of early infancy—Symptoms—Changes in form and size of the head, and their mode of production—Course of the disease—Termination almost always fatal.

Post-mortem appearances—Internal hydrocephalus—cerebral substance not destroyed—changes in the ventricles—External hydrocephalus—circumstances under which it exists.

Treatment—Importance, but difficulty, of distinguishing curable and incurable cases, and external from internal hydrocephalus—Gölis's plan—Compression—Puncture—Cases suited for each mode of treatment.

GENTLEMEN,—We have now completed our examination of the acute inflammatory affections of the brain, and with them we may consider that we have dismissed the most important class of diseases of that organ. Before we pass, however, to those in the production of which inflammation bears no part, we must study one malady which forms a kind of connecting link between the two.

Chronic Hydrocephalus, or Dropsy of the Brain, is a morbid condition met with in children at various ages, and coming on under a great variety of circumstances. Sometimes it is congenital, and is then usually, though by no means invariably, associated with malformation of the brain. In subsequent childhood, an excess of blood in the brain, or its deficiency, or the existence of some impediment to the circulation through the organ, are conditions all of which have been found to give rise to the effusion of fluid into the cavities of the brain, or upon its surface. Instances of chronic hydrocephalus are on record which have succeeded to hæmorrhage into the sac of the arachnoid; others, that have been connected with wasting of the brain, in consequence of

the supply of blood being inadequate to its due nutrition, or in which obliteration of the sinuses by disease, or the pressure of a morbid growth upon some of the vessels of the brain, has interfered with the due performance of the cerebral circulation. In the majority of cases, however, the disease is not a mere passive dropsy, but is the consequence of a slow kind of inflammation of the arachnoid, especially of that lining the ventricles, which may have existed during foetal life, or not have attacked the child until after its birth.

A few cases are on record in which a considerable accumulation of fluid has taken place within the skull of the adult, and has occasioned various cerebral symptoms, followed by death. In other instances the same occurrence has happened in young persons whose skulls, though ossified, were not firmly closed, and have consequently yielded at the sutures, thus producing considerable enlargement of the head. These, however, are exceptional cases,—mere pathological curiosities, which it will suffice to have mentioned, for in most instances chronic hydrocephalus comes on within the first six months of life. I find, indeed, on examining the date of the commencement of the disease in 50 cases (14 of which came under my own observation, and the remaining 36 are recorded by different writers), that some symptoms of it were observed in 46 cases before the child was six months old: that in 12 of these the malady was congenital; and that in 19 more it came on before the completion of the third month.

The early symptoms of the disease vary. When it is congenital, indications of cerebral disturbance are generally apparent from the infant's birth. These are sometimes serious—such, for instance, as convulsions, recurring almost daily; at other times they are comparatively slight, and consist in nothing more than strabismus, or a strange rolling of the eyes, unattended with any very definite sign of affection of the brain. The size of the head generally attracts attention before long, and causes importance to be attached to symptoms which otherwise might have given rise to but little anxiety. In some instances, however, the increased size of the head is not very obvious until the child is a few weeks old, although well-marked symptoms of mischief in the brain existed from its birth. Enlargement of the head, indeed, is by no means invariably the first indication of chronic hydrocephalus. In 12 out of 45 cases, fits, returning frequently, had existed for some weeks before the head was observed to increase in size; in 6 the enlargement of the head succeeded to an attack resembling acute hydrocephalus; and in 4 other instances, it had been preceded by

some well-marked indication of cerebral disturbance. In the remaining 23 cases, no distinct cerebral symptom preceded the enlargement of the head; but in almost every instance the child's health had been noticed to be failing for some time, although the cause of its illness was not apparent.

In whatever way the disease begins, impairment of the process of nutrition is sure to be one among its earliest symptoms. The child may suck well, and, indeed, may seem eager for food, but it loses both flesh and strength; and often, although the head has not yet attained any disproportionate size, the child is unable to support it, either losing the power it had once possessed, or never attaining that which, with its increasing age, it ought to acquire. The bowels are usually, though not invariably, constipated. Sometimes diarrhoea comes on for a day or two; but, under either condition, the evacuations are almost always of an unhealthy character. Thus far, indeed, there is but little to distinguish the case from any other in which a young infant is imperfectly nourished, but even though no well-marked cerebral symptom be present, occasional attacks of heat of head will be observed, attended with pulsation or tension of the anterior fontanelle, while crying and restlessness often alternate with a drowsy condition, though the child almost always sleeps ill at night. In many instances, too, the open condition of the fontanelles and sutures excites attention long before any marked enlargement of the head becomes perceptible.

By and by, however, the increased size of the head grows very manifest, and the child's physiognomy soon assumes the distinguishing features of chronic hydrocephalus. As the disease advances the unossified sutures become wider, the fontanelles increase in size, their angles extend far into the sutures in which they terminate, while the fluid pressing equally in all directions, tends, in obedience to a well-known law, to impart a globular shape to the receptacle in which it is contained. Some of the casts upon the table afford striking illustrations of this change in the form of the cranium, which would be still more remarkable were it not for the very unequal resistance of different parts of its parietes. The bones at the vertex of the skull are much less firmly fixed than the others, and ossification is nowhere so tardy as at the anterior fontanelle, and along the inner edges of the parietal bones. Hence it results that the great increase in the size of the head is effected by enlargement of the anterior fontanelle, and by widening of the sagittal suture. The os frontis consequently becomes pushed forwards, the parietal bones are driven backwards and outwards, and the occipital bone downwards and backwards. The displace-

ment of the bones is very obvious in this hydrocephalic skull, but is still more striking in the two engravings which I here show you.* You notice the great prominence of the forehead, and the alteration in the position of the parietal bones, which are driven backwards as well as outwards, so that the natural relations of their protuberances are altogether changed, while in this remarkable case of a man named Cardinal, who, though hydrocephalic from his infancy, lived to the age of 29 years, the occipital bone lies almost completely in a horizontal position. You will observe, too, another remarkable alteration produced by the yielding of the orbital plates of the frontal bone, which are driven by the accumulating fluid from a horizontal into an oblique direction. Sometimes, indeed, they become nearly perpendicular, when, by contracting the orbits, they give to the eyeballs that unnatural prominence and that peculiar downward direction which constitute one of the most remarkable features in cases of chronic hydrocephalus.

Few objects are more pitiable than a little child who is the subject of far advanced chronic hydrocephalus. While the skin hangs in wrinkles on its attenuated limbs, the enlarged head appears full, almost to bursting, owing to the stretching of the scalp, and the scanty growth of hair does not at all conceal the distended veins that run over its whole surface. The size of the skull, too, appears greater than it really is, since the face not only does not partake in the enlargement, but retains its infantile dimensions much longer than natural. The eyes are so displaced by the altered direction of the orbital plates, that the white sclerotics projects below the upper lid, and the iris is more than half hidden beneath the lower. Often, too, there is a considerable degree of convergent strabismus, or a constant rolling movement of the eyeball, which the child is unable to control, or the pupil is dilated and quite insensible to light.

The symptoms of cerebral disturbance that attend the advance of the disease differ much in severity. Sometimes there is little besides a state of uneasiness and restlessness, aggravated at intervals when the head grows hot and the fontanelle becomes tense. In other cases convulsions occur very frequently, being induced by extremely slight causes, or coming on without any. In several instances I have observed spasmodic attacks of difficult breathing, attended with a crowing sound in inspiration, and those symptoms which constitute spasmodic cramp, seizures of which sometimes come on even before there is much enlargement of the

* Baillie's *Morbid Anatomy*, fasc. x. plate iii. fig. 1, and the drawing of Cardinal's skull in Bright's Reports, vol. ii. part 2, plate xxxv.

head. But, whether the cerebral symptoms are slight or severe, almost every case of chronic hydrocephalus has pauses in its course, during which the child seems to enjoy a comparative immunity from suffering, and gains flesh, while its head ceases for a time to enlarge. Nothing, however, can be more variable than the frequency of these pauses, or their duration.

Though almost every case of chronic hydrocephalus is fatal, yet death takes place in very different ways. Children who are the subjects of the disease are almost always very weakly; hence, they often give way under the first serious illness that attacks them, and are carried off by maladies totally unconnected with their head affection; while many others sink into that state of atrophy by which the disease of the brain is often accompanied, and die exhausted. Others are carried off suddenly by convulsions, or fall victims to some severe paroxysm of spasmodic cramp; and there are other instances in which the disease seems lighted up again after a pause, by the irritation of teething or by some trivial accident, and death is preceded by the indications of acute cerebral mischief.

In a very few instances the disease comes to a stand-still; no more fluid is poured out into the brain, the sutures and fontanelles gradually become ossified, and as the child grows older the great disproportion between the head and face diminishes by the development of the latter. It has been suggested by Professor Otto* that in some of these cases a cure is effected by an increased activity in the nutrition of the brain producing hypertrophy of the organ; but I cannot say whether or no this process ever does take place. In the majority of instances it probably does not occur, and the case is not one of recovery, but simply of arrest of the disease; the head continuing full of fluid, but its quantity neither increasing nor diminishing. This probably was all that occurred in the case of Thomas Cardinal, whose bust I here show you. Having been hydrocephalic from infancy, he yet lived to the age of 29 in the possession of a tolerable amount of bodily and mental activity. On examination of his body after death between seven and eight pints of fluid were found in his cranium. In the greater number of instances symptoms exist during life which show clearly enough that the arrest of the disease differs widely from its cure, for the intellectual powers are generally feeble, and the temper very irritable, while the child is often unable to walk, and its sight is very imperfect.

In by far the greater number of cases of hydrocephalus the fluid collects in the

interior of the brain, constituting what is called *internal Hydrocephalus*, in contradistinction to other cases in which the fluid is contained in the sac of the arachnoid, and to which the name of *external Hydrocephalus* has been given. In cases of the former kind the lateral ventricles are always considerably distended; and if the disease have been of long standing, the cerebral convolutions are often obliterated, and the hemispheres expanded into sacs with exceedingly thin parietes by the enormous accumulation of fluid within them. It was long supposed that there was a real destruction of cerebral substance in these cases, and that the brain had actually melted down, as it were, beneath the encroachments of the fluid. This opinion was the more readily entertained from the circumstance that the attenuated brain often gave way under examination, and the relation which the different parts had actually borne to each other was thus involved in hopeless confusion. It has been ascertained, however, that this was a mistaken notion; that the cerebral substance is (as you may see in this engraving*) simply unfolded, not destroyed; and even when the walls of the ventricles are not above two or three lines in thickness, the two layers of white and grey matter are still distinctly perceptible. In by far the greater number of instances the fluid is contained entirely within the ventricles, the cerebral substance undergoing no change other than that produced by compression; but on one occasion I found the fluid infiltrated between the fibres of the brain themselves, so that the interior of the organ was split up into a number of irregular pouches communicating with each other, while similar, though smaller, collections of fluid had formed between the fibres of the cerebellum.

Although fluid is often found in all the ventricles, yet it is in the lateral ventricles that it collects most abundantly; and in their interior we discover the most important changes. Their lining membrane has lost its transparency and polish, is thick and tough, and the vessels which run beneath it are much larger than usual, though it is seldom that we observe the marks of recent congestion. Sometimes a distinct false membrane lines their floor, and may even occlude the foramen of Monro, which otherwise is found greatly enlarged, so as to admit of extremely free communication between the two ventricles. In cases where the foramen of Monro is thus closed, the fluid is either entirely confined to one ventricle, or at least greatly more abundant on one side than the other—a circumstance which accounts for the great want of sym-

* Rokitanaky's Pathologische Anatomie, I. bd. S. 749—750.

* Vrolik, Traité sur l'Hydrocéphale interne, 4to. Amsterdam, 1839, Pl. iii.

metry occasionally observed in hydrocephalic skulls. Even when no false membrane is found within the ventricles, their lining often presents other evidence besides mere thickening of its having been the seat of inflammation. Sometimes it is roughened and granular, presenting an appearance closely resembling shagreen, and communicating a very perceptible roughness to the finger. All parts do not seem equally liable to undergo this change, but I have observed it to be much more marked about the corpora striata than elsewhere. The same circumstance is noticed by Professor Rokitsky*, who states, moreover, that these granulations sometimes become very large, and at length acquire distinct pedicles, and hang down into the cavity of the ventricles; a condition which I have not met with. These and other similar alterations of the lining of the ventricles afford conclusive evidence of the inflammatory origin of most cases of chronic internal hydrocephalus. They are, as far as I know, always associated with traces of inflammation of the arachnoid at other parts, while they are met with in cases where the ventricles contain no excess of fluid, and in adults as well as children. My friend Dr. Ormerod has kindly communicated to me the particulars of six cases in which he observed this granular state of the lining of the ventricles in the adult, and in every instance it was associated with other indications of old inflammation of the arachnoid.

The central parts of the brain often do not appear much altered, but sometimes they are in a state of great softening; while in other cases fluid is infiltrated between the fibres of the brain, though without any great diminution of its consistence.

MM. Rilliet and Barthex†, who regard chronic hydrocephalus (when not combined with congenital malformation of the brain) as a passive dropsy, the result of obstruction to the cerebral circulation, speak of tubercular or other tumors pressing on the *venæ Galeni* as if they were of almost constant occurrence in these cases, while they take no notice of the very important changes in the lining of the ventricles. Now, though there can be no doubt but that effusion of fluid in the interior of the brain does sometimes arise from such a cause, yet an effusion so considerable as to occasion manifest enlargement of the head, and other symptoms of chronic hydrocephalus, is, I believe, but seldom thus produced. The greater number of recorded cases of chronic hydrocephalus, too, do not by any means bear out this statement.

* *Pathologische Anatomie*, ii. 742. The same appearance has also been noticed by Dr. Bright in his Reports, vol. ii. part 2, p. 693, though not in connection with chronic hydrocephalus.

† *Traité des Maladies des Enfants*, i. 693.

The marks of inflammation of the membranes at the base of the brain are usually very evident, and often there is an extremely abundant effusion of that hyaline matter in the meshes of the pia mater to which I called your attention when speaking of acute hydrocephalus; but there is nothing in the state of the membranes characteristic of the chronic form of the disease.

In cases where vision has been lost, the optic nerves are often found spread out into flat bands of nervous matter, owing to the compression to which they have been subjected.

The presence of a large quantity of fluid in the sac of the arachnoid, constituting what is called *external hydrocephalus*, may arise from several causes.

1st. The commissures of the distended brain may yield, and a portion or the whole of the fluid which it contained may escape into the cavity of the cranium. This seems to have taken place in the case of Cardinal, whose skull contained seven or eight pints of fluid, while "the brain lay at its base, with its hemispheres opened outwards like the leaves of a book."*

2nd. An atrophied condition of the brain may exist, and fluid may be poured out to fill up the vacuum thus produced in the skull. In most cases where atrophy of the brain is unconnected with congenital malformation of the organ, the quantity of fluid thus effused is too inconsiderable to produce any enlargement of the patient's head, though I once met with a case which would seem to show that this rule is not without exception.

3rd. A large quantity of fluid is sometimes found in the sac of the arachnoid, as the result of hæmorrhage into its cavity, and of the changes subsequently undergone by the effused blood. MM. Rilliet and Barthex, who have most ably investigated the subject of hæmorrhage into the arachnoid, believe that chronic hydrocephalus frequently has this origin. I have once or twice seen cases which I suspect were of this nature, but have never had the opportunity of confirming my suspicions by a post-mortem examination.

The reputed means of cure of any disease are generally numerous in a directly inverse proportion to its curability, and to this rule chronic hydrocephalus certainly forms no exception; "its remedies have been derived," as Gölis says, "from all the kingdoms of nature, and include almost every kind of surgical contrivance and pharmaceutical compound." It would be an almost endless task to attempt estimating the comparative value of them all; and I think it more useful to direct your attention to a few points of real importance.

First of all, I would have you bear in mind

* Bright's Reports, vol. i. part 1, p. 438.

that there are some cases in which you can do no permanent good, but in which treatment must fail, not because it is improper, but because the malady does not admit of cure. Such cases are those in which the accumulation of fluid within the brain is associated with extensive congenital disease, or malformation of the organ. If aware of its existence, our treatment would, of course, be simply palliative, and our efforts would be limited to securing euthanasia, since we could not hope to avert death. We should suspect the affection to be incurable, if, though the head were large, and its ossification very imperfect, the forehead were low and shelving; if a considerable degree of paralysis were present, if convulsions occurred daily and causelessly, and especially if these or other indications of serious cerebral disorder had existed almost from birth. Unfortunately these hopeless cases are by no means invariably characterized by peculiar symptoms, and the amount of functional disturbance often affords but a very incorrect index to the extent of organic lesion; your prognosis, therefore, must always be most guarded, and even when you see every reason to expect success, you must yet be prepared for failure.

On the other hand, you must not regard a case as hopeless, and abstain from remedial measures, merely on account of the head having been larger than natural at birth, or its ossification having been less advanced than usual, since we have evidence of perfect recovery from chronic hydrocephalus in cases where many circumstances had appeared to indicate that the disease was congenital. The state of the cerebral functions must influence your prognosis as much as the size of the head, or even more.

If we were able accurately to determine the seat of the fluid within the cranium, such knowledge would often exert a considerable influence both on our prognosis and our treatment, since there are some measures from which much benefit might be hoped in external hydrocephalus, that would avail little, or even do harm, if the fluid were contained within the ventricles. There are, however, no means of distinguishing with certainty between external and internal hydrocephalus. The shape of the head appears to be much the same in both forms of the disease, though in external hydrocephalus, consequent on hemorrhage into the arachnoid, the skull never attains the enormous dimensions which it sometimes acquires in cases when the fluid was originally poured out into the interior of the brain: in such cases, too, the patient's history would probably furnish some clue to a diagnosis. The disease would almost certainly not be congenital, in all probability it would not have begun before the sixth or eighth month, and

the commencement of the child's illness would most likely have been marked by a sudden and distinct convulsive seizure.*

In either form of chronic hydrocephalus, the success of treatment must depend, to a great degree, upon its being adopted early, but in no stage of the disease can good be expected from violent remedies; rough measures would be likely to destroy the patient rather than the malady. I do not know of any plan, on the whole, more likely to be of service, than that which Professor Göllis, of Vienna, recommended as the result of many years' experience. He advises that the head of the child be shorn, or its hair cut close, and that one or two drachms of the mild mercurial ointment be rubbed daily into its scalp. At the same time, the head is to be kept constantly covered with a flannel cap, to prevent the risk of the perspiration being checked by the cold air, and gr. $\frac{1}{2}$, or gr. $\frac{3}{4}$, of calomel, should be given twice a day, unless diarrhoea come on, when the inunction alone must be employed. This plan should be persevered in for thirty or forty days, when, if the patient appear improving, the remedies may be very gradually diminished, but the cap should be still worn even after the inunction has been discontinued. Should no great improvement appear, after a lapse of six or eight weeks, some mild diuretic may be conjoined with the other remedies, and a couple of issues may be inserted in the occiput. For this measure, however, I have always substituted the frequent application of blisters to the back of the neck.

The woollen cap, recommended by Göllis, often seems agreeable to the child, but sometimes I have had to discontinue it, in consequence of the heat of head which it produced. In most cases, too, you will be compelled to resort to occasional leeching, in order to subdue the attacks of heat of head and restlessness, which are exacerbated from time to time, and often attended with other symptoms that threaten the supervention of acute disease.

The observation that in some cases where spontaneous cure of a chronic hydrocephalus takes place, the ossification of the head, previously so imperfect, makes rapid advances, and the bones become early united, led Mr. Barnard,† of Bath, to imitate nature's processes, and to bandage the head so as to prevent its yielding to the accumulating fluid. He has related several cases of the successful adoption of this practice, though, like many other persons, he rides his hobby rather too hard, and advocates his mechanical method to the exclusion of

* Legendre, *Recherches Anatomico-pathologiques*, etc., p. 135; and Rilliet et Barthez, *op. cit.*, tome ii. p. 46.

† Cases of Chronic Hydrocephalus, &c., by J. H. Barnard, 8vo. London, 1839.

all other treatment. It is, however, a valuable adjunct to other treatment in some cases. Unless you apply it well it will be of little service, and the plasters by which compression is applied will come off. You cannot do better than follow M. Trouseau's rules for their application.* He uses strips of diachylon plaster about one-third of an inch broad; and applies them,—1st, from each mastoid process to the outer part of the orbit of the opposite side; 2d, from the hair at the back of the neck along the longitudinal suture to the root of the nose; 3d, across the whole head, in such a manner that the different strips shall cross each other at the vertex; 4th, a strip is cut long enough to go thrice round the head. Its first turn passes above the eyebrows, above the ears, and a little below the occipital protuberance, so that the ends of all the other strips shall project about one-fourth of an inch below the circular strip. These ends are next to be doubled up on the circular strip, and its remaining two turns are then to be passed over them just in the same direction as the first turn. By this means you secure a firm and equal and very powerful pressure on the head. You must watch the results of this proceeding very carefully, and loosen the plasters if symptoms of compression appear, since it once happened, from neglect of this precaution, that the fluid acted on the base of the skull, detaching the ethmoid bone from its connections, and occasioned the infant's death.

You will naturally inquire whether pressure is applicable to every case, and if not, when should it be employed? I regret that I cannot answer these inquiries so satisfactorily as I could wish. It is my belief, however, that cases of external hydrocephalus, which have succeeded to previous hæmorrhage into the arachnoid, would be found better adapted than any others to treatment by mechanical means; while I am quite sure, from actual experience, that when there is any appearance of active cerebral disease, pressure will not do good. Sometimes, too, you may be compelled to remove the plasters because they irritate the skin; and for this, as well as for other reasons, I would recommend you to follow Dr. Watson's suggestion, and to make trial of Dr. Arnott's air-press, as a means of compressing the head probably superior to any other.

Puncture of the cranium, and the evacuation of the fluid, is another proceeding which has been strongly advocated by some writers; and this not merely as a palliative, or as an adjunct to other remedies, but as a means of effecting the radical cure of the

disease. It appears on a comparison of the results obtained in 63 cases, which were operated on by different persons, that 18, or 2 out of every 7, terminated favourably. Unfortunately, however, very few of the cases of alleged recovery are related with any degree of minuteness, while with reference to many no further information is given than that a certain quantity of fluid was removed by so many punctures, and that the patient got well. It seems doubtful, therefore, whether the amount of real success has not been overstated, while it is certain that in several cases the death of the child was materially hastened by the operation. On the other hand, there are some instances of a permanent cure following its performance; and, though I would not have you be very sanguine as to the result, you would, I think, be justified in trying the operation in a case that seemed in itself favourable for the experiment, and in which you could feel sure of your directions being intelligently followed out by the friends of the child.*

I should regard any case as favourable for the operation which on the whole there was good ground for believing to be one of external hydrocephalus, or in which the enlargement of the head had not been attended with indications of active cerebral disease. Though on the whole less promising, I should not reject the operation simply because enlargement of the head had been congenital; while I should always be more ready to operate if nutrition were well performed than if the child were emaciated. I would not, however, as a general rule, have you operate simply because the head is large; for it does not appear that diminution in its size has resulted from the puncture, but only arrest of its enlargement; and if the disease be at a stand-still, and the cerebral functions tolerably well performed, you would risk much with the chance of gaining but very little.

The proper situation for the puncture is the coronal suture, about an inch, or an inch and a half, from the anterior fontanelle. A fine trocar and canula are the best instruments; and care must be taken not merely to withdraw only a very few ounces of fluid at a time, but to keep up pressure both during the escape of the fluid as well as afterwards.

* See with reference to this subject, "An Enquiry into the Results of Puncture of the Head, in Cases of Chronic Internal Hydrocephalus, in *MED. GAZETTE*, April 1842; and the very valuable paper of M. Durand-Fardell, in *Bull. Gén. de Thérapeutique*, vol. xxiii. p. 190.

LECTURES
ON
ALBUMINURIA,
OR
THE MORBUS BRIGHTII.

Delivered at Guy's Hospital,

By G. OWEN REES, M.D. F.R.S.

Assistant Physician to the Hospital, and Principal Medical Officer to the Pentonville Prison.

LECTURE II.

GENTLEMEN.—Having in a former lecture described to you the principal features of the morbus Brightii, so far as they relate to the general pathology of the affection, I shall now proceed to the symptoms presented during its progress, and to direct your attention to those phenomena which, being more or less peculiar to the disease, afford us assistance in detecting it in its early stage. By early recognition of such symptoms we frequently have the opportunity of relieving, if not permanently curing, cases which otherwise will be sacrificed to the deficient foresight of the medical attendant. Albuminuria may be divided into the acute and chronic varieties, that is to say, we observe cases which show violent symptoms for a short period and then go on to a permanent cure, or at a remoter date take on the character of a chronic affection. Now by far the greater number of cases are of this latter description, and become chronic at no very distant period from the first attack; indeed, so very frequently does this occur, that many who were among the first observers of cases of albuminuria were inclined to the opinion that it was necessarily a mortal disease, and one which assumed the chronic and fatal form as a necessary sequel. It must be remembered, however, that Dr. Bright was aware that cases of albuminuria were occasionally to be cured even at an early date in the history of his discoveries and observations on the subject.

The symptoms characterising the acute stage of albuminuria may be described as follows:—A febrile attack with severe pain in the head, dryness of skin, loss of appetite and thirst; scanty secretion of urine, and dysuria, with frequent desire to pass the urine; pain in the loins and lower extremities; urine albuminous, and occasionally, but rarely, bloody; nausea is very commonly felt, and vomiting may occur. Now these symptoms will sometimes last many days without the occurrence of any very marked oedema of the cellular tissue, but for the most part we seldom find thirty-six hours to pass but that dropsy of a very decided character will attract the attention of the practitioner.

As regards dropsical swellings, even when the lower extremities are not oedematous the face may become swelled, and this is so general a symptom that we may frequently detect albuminuria from this alone, and that, too, when the train of symptoms generally characterising the affection is but imperfectly developed. Now if the remedies applied quickly remove the acute symptoms, and the albumen eventually disappears from the urine, the patient often experiences no return of the disease; at least every one who has attended much to the subject must possess well-authenticated records of persons so recovering, and who have enjoyed perfect health for many years. But when the case is different, owing either to the constitution of the patient or improper treatment, the chronic form of the disease becomes developed. The symptoms characterising the chronic stage are in the main much like those of the acute, but they are more insidious, and generally so gradual in their progress that the medical adviser is seldom applied to till the disease has advanced far beyond the point at which medical skill is of avail. The pallor of anemia and general malaise, with dyspepsia, and a frequent desire to pass urine, are often the only symptoms present, and the slight oedema (perhaps only to be seen about the eyes in the morning, and distending the legs at night), even if present, may not have attracted the attention of the patient. Now it is well that you should remember that oedema is in reality nothing more than one of the complications of the morbus Brightii; it is true it is a very frequent one, but nevertheless it is not necessary to the full development of the disease. It is from not bearing this in mind that many persons have overlooked cases. Under an impression that anasarca is a necessary part of the disease, they recognise affection of the kidneys only in the existence of oedema, while in fact it may exist for months with little more than that tendency to puffiness of the extremities which is observed in ordinary cachexia.

Whenever cases of debility with tendency to nausea or vomiting present themselves to your notice, it is well to inquire into the state of the urine, and if you find the patient complaining of frequent desire to micturate, even though there be no pain in the loins, or oedema, it will not unfrequently happen that the urine will be found albuminous, and all the symptoms of the morbus Brightii develop themselves within no very great length of time.

You must not expect that patients will give you any account of their urine which will assist you to a suspicion of its diseased condition. They may describe it as remarkably clear and well looking, which is really the case with many varieties of albuminous

urine; but do not be misled by such a description into a belief of its excellence.

Now I have described anasarca as one of the complications of kidney disease, and not a necessary symptom, and my more especial reason for doing so is, that some of the most rapidly fatal cases have not shown anasarca; and in such cases, in which the brain especially is involved, the oedema has often been a less prominent symptom than in cases which only terminate life after a long period. The anasarca, therefore, may be regarded rather as the most frequent complication than as a necessary symptom. When describing the state of the blood I alluded to the pallor or anæmiated condition of the subjects of the morbus Brightii. This condition is much like that induced by chlorosis. I do not, indeed, observe any difference whatever in the hue. When very prominently marked, a dull yellow colour seems to pervade the features, but this again is the case in chlorotic girls. I dare say some of you have had an opportunity of observing among the out-patients that the advanced stage of chlorosis is characterised by a yellow colour rather than by extreme whiteness, and that this colour passes to white before the flesh tint again returns to the cheeks.

I once saw an advanced case of albuminuria in a girl of about 17 years of age, and at a first view was inclined to consider it an ordinary instance of chlorosis; the history of the case, however, led me to further inquiries, and to the detection of the true nature of the complaint. I do not therefore believe that there is anything very distinctive in the colour or tint of the anæmia of albuminuria.

The attention of Dr. Bright was first directed to the kidney disease bearing his name, by the anasarca which was so constant an accompaniment; and it is remarkable how large a number of cases of anasarca are connected with kidney disease. Dr. Christison states that in Edinburgh three-fourths of the cases of anasarca are connected with disease of the kidneys, while Fergat, at Strasbourg, gives the proportion at one-half.

When anasarca exists to any extent we find that the serous membranes, as well as the cellular tissue, admit of transudation of fluid through their substance. Thus it is that we have ascites present, and those effusions into the pleura which add so much to the anxiety and distress of the patient.

There is a form of anasarca, viz., that observed to occur in children after scarlatina, which resembles in many respects that produced by the morbus Brightii, and it is a matter of doubt how far it may be attributable to the same cause. In this disease the urine is often loaded with albu-

men, and it has occurred to me to detect urea in the blood. On the whole it appears probable that the kidney becomes congested as a sequel probably to the injury inflicted on the skin, and the interference with its function during scarlatina, and that, if there be any predisposition to the affection, this exciting cause will prove sufficient to complete the mischief. That these cases following scarlatina do occasionally go on to confirmed disease of kidney is very certain; but the general rule is, that they are rapidly and permanently cured. There is a circumstance connected with the history of anasarca cases in general, which was first noticed by Dr. Christison, and deserves attention in relation to the subject now before us, as it will often enable us to make a shrewd guess as to the existence of kidney disease: I allude to the fact that anasarca, if accompanied by the excretion of a large quantity of water, may almost certainly be considered as dependent on the presence of albuminuria. This large secretion of urine I have described to you as more especially occurring in the advanced stage of albuminuria, and I quite agree with Dr. Christison that we have in this symptom a valuable guide to the true nature of the disease. This increased flow is not *always* present to assist us, however, and it is principally as to the presence or absence of albumen that we must inquire as a more certain guide.

In connection with the tendency to general effusions, I think we ought to consider the watery discharges from the bowels occasionally observed in this disease. Diarrhoea (sometimes of an obstinate character) occurs in advanced cases, and may, I think, be placed in the same category as the discharge of water by the kidney. The blood is watery, and we may therefore naturally expect that every surface will pour out its secretion affected by watery degeneration, and that the mucous as well as serous surfaces will be so affected.

The occurrence of apoplexy or coma is one of the most common and important complications of the morbus Brightii, and in its mode of attack, as well as its progress, it differs materially from the comatose seizures of other forms of apoplexy. By some authors, especially Dr. Osborne, this coma has been regarded as the effect of sub-acute arachnitis; but if this occasionally be the case, it is certain that in a very great number of instances no evidence of arachnitis is to be observed, the patient either sinking from simple effusion into the ventricles, apparently of a passive character, or no evidence whatever of any lesion being discovered after death.

During the progress of cases which terminate fatally by apoplexy, drowsiness is generally observed, and this gradually goes

on to the production of stupor; vision becomes indistinct, and eventually coma, either with or without convulsions, terminates the case. There is a peculiarity connected with these apoplectic seizures, consisting in the fact that they are very frequently accompanied by epileptic convulsions, or rather convulsions simulating the epileptic character. An excellent account of the manner in which cerebral symptoms attack the patient, together with a description of the peculiarity of the affection, will be found in the number of the *Gray's Hospital Reports* for April, 1839, in a paper by Dr. Addison.

In some cases of death by apoplexy occurring in this disease, it would appear that the patient sunk from a passive effusion on the brain occurring with the effusions in other parts, and as an effect having the general watery condition of the blood for its cause. These cases sink by stupor and coma without convulsions. In other cases, however, the effusion does not appear great in quantity, or may be absent altogether, while violent convulsions, and the peculiar symptoms before detailed, point to some more specific cause of mischief than mere passive watery effusion. The urea circulating in the blood has been supposed by some a sufficient cause for the death of the patient by apoplexy, even if little or no fluid be found in the brain on post-mortem inspection. It has been thought that the brain becomes poisoned, as it were, by the urinous matters existing in the circulation.

Before entering upon this subject, I must direct your attention to the fact, that in Bright's disease, these fatal cases of apoplexy have been shown by Dr. Christison to bear no relation to the quantity of urine excreted by the patient. Thus a large or normal excretion may be going on, and yet fatal coma supervene; on the other hand, in cases characterized by partial suppression, the patient will often go on to the last without any head symptoms coming on. This has happened, too, when urea has been shown by analysis to exist in the blood. In these latter cases, not only has the bulk of urine diminished, but the positive weight of solids excreted during the twenty-four hours, has been much less than in health, and yet coma has not appeared as a symptom. For my own part, I am greatly inclined to believe that we must look to other causes than the poisoning of the brain by urea for the comatose symptoms observed in this disease. It happened to me, not long ago, to examine the blood of a patient who had his senses about him to the last moment of his life, and whose blood was more impregnated with urea than that of any case of Bright's disease that ever came under my notice. He eventually sunk, and it was found that no kidney existed on one

side, and that the large complementary organ had its ureter obstructed by a calculus. Now here was complete suppression, the blood loaded with urea, and no comatose symptoms. I think it right to mention these difficulties in arriving at an opinion, though I cannot assist you to the truth: before leaving the subject, however, I would suggest that it may be found, perhaps, hereafter, that a certain tenuity of blood must exist in connection with the presence of urea in that fluid, before the comatose condition can be brought about.

Among the most common complications observed in this disease may be mentioned heart affections, affecting either the endocardium or pericardium, and in some cases both membranes simultaneously. The frequency of heart disease, in connection with granular degeneration of the kidney, has, indeed, led some to the belief that the disease of the kidney ought, in most cases, to be considered as a consequence of the heart affection. Now the forms of diseased heart vary extremely. We may either have simple hypertrophy, valvular or pericardial mischief. In advanced cases, the pericardium often becomes filled with fluid from passive effusion taking place within its cavity.

Diseased liver is a very common complication occurring in the course of granular degeneration of the kidney. Its cause probably exists in the fact that many of those who are the subjects of kidney disease are of intemperate habits, and thus have earned for themselves this second cause of suffering. Ascites, as a symptom of morbus Brightii, has, by some, been considered as always dependent on enlargement or obstruction of the liver. This, however, is not the case, though certainly the worst cases of ascites are those in which such complication of liver disease is present. The form of disease observed in the liver is very generally that of tubercularization, or the roughened liver, a condition, in all probability, brought about by attacks of inflammation and subsequent contraction of the organ.

Bronchitis, in the acute or chronic form, is a very common complication of this disease. How far, however, it is to be considered as a result of the conditions which tend to produce the granular degeneration of the kidney, appears somewhat doubtful. We must remember that patients who are brought to the hospitals with anasarca have very frequently been exposed to cold, and thus to the action of a sufficient cause for the bronchitis. On the other hand, bronchial disease is, doubtless, much aggravated by the general tendency to effusion which, in advanced stages, greatly obstructs the lung by producing an cedematous condition of its structure.

Pleurisy and peritonitis are often observed in the course of this disease: pleurisy is by far the more common form of the two. It appears, according to Solon, that in France these complications are but little known. In England, however, they are sufficiently frequent to warn you of the danger of neglecting any symptoms characteristic of these inflammations of serous cavities.

The pleuritis is often associated with pneumonia, or pneumonia may exist alone, but this is not commonly the case. Sometimes, especially if it occurs in early stages of the disease, we have its symptoms well developed, and even if pleuritis occur with it to complicate the auscultatory signs, there is the short cough and pungent heat of skin which may guide us to a knowledge of the true nature of the case.

A tendency to rheumatic swellings and pains has been observed by Dr. Christison in this disease, and he has met with many previous histories which mention the symptom as having occurred at the commencement of the attacks. Such affections, varying, however, in character from true rheumatism, have often come under my notice.

The causes tending to the development of Bright's disease may be enumerated as follows: viz. scrofulous habit; intemperance; mercurial disease or erythema; exposure to cold; exposure to moist atmosphere; blows on the loins.

Out of 17 cases observed in the clinical wards during the summer of 1842, by Dr. Barlow, and myself, 6 had received blows or injuries over the lumbar region. Scrofulous habit, and exposure to cold, may, I think, be regarded as the most probable of the causes enumerated above for the production of albuminuria. The latter, in all probability, however, is merely an exciting cause, the great and predisposing cause being the scrofulous diathesis. This opinion as to the scrofulous character of the disease is supported by the observations of Solon, who found phthisis in five out of ten fatal cases which came under his notice, and our experience in England shows the frequent concurrence of tubercular affection of the lungs with granular degeneration of the kidney.

Treatment.—Now, from what has been stated to you concerning the nature of this disease, you will, I am sure, be prepared to expect that the treatment must vary considerably not only in relation to the acute or subacute character of the attack, but also in respect to the previous history of the patient, and the stage of development in which we find the disease on making our examination. The symptoms even if acute may merely be such as are engrafted on a chronic disease of the kidney; and while the complications of chest affection may be demanding close attention and active measures, we must not forget

that our patient has to go through a struggle of long duration with the original or primary disease when we have relieved him from these immediate dangers—a struggle, indeed, which but too frequently terminates in death.

On the other hand, we must not be persuaded into a belief that our case is progressing favourably, by observing that symptoms assume a fluctuating character, and the more immediate causes of distress occasionally abate. We must remember that we have a tendency to the development of mischief in the kidney, which can only be arrested by continued care on the part of the patient, and the close attention of the medical attendant.

In the early stages much benefit may be derived from the use of antiphlogistic measures; and even when no complications are present to call especially for the use of depletion, we may always commence with the use of remedies tending to relieve the congested state of the kidney. In young persons, especially saline purgatives, the vapour bath, and antimonials are indicated, while we shall do well (whatever be the condition of the urinary excretion either as to quantity or quality) to avoid diuretics of every description. The probable state of the kidney must never be lost sight of, and everything tending to determine to that organ, either in the form of medicines or articles of diet, should be studiously avoided in this early stage.

It has been a very common practice to take blood from cupping the loins in acute cases, and when carefully done in small quantity, I have reason to believe with benefit to the patient. This depletion, however, must not be carried far, and for the reason that we know the tendency of this disease is to go on to a second stage, in which the blood becomes watery and degenerate; and nothing tends more to induce this watery state than blood-letting in any form. This need not deter us from small cuppings over the loins, however, in cases characterised by hot skin, quick pulse, and thirst; indeed, in such cases we can do good by small depletions, while at the same time we keep up the action of the skin by antimonials and febrifuge medicines. Antimony has obtained so high a character as a remedy in this disease that some have even gone so far as to believe that it possesses a specific action as a cure. There is no occasion to have recourse to such a view however, since the therapeutical action of antimony is precisely such as we require to meet the pathological conditions presented to us in albuminuria.

The diaphoretic action, which perhaps far exceeds that of any remedy with which we are acquainted, and which is brought about

without excitement to any organ, while the heart's action becomes moderated, are properties sufficiently desirable to recommend antimony as a valuable means of suppressing the tendency to congestion on the part of the kidney.

When inflammatory complications are present in any stage, we shall do well, if possible, to urge antimony as a remedy in preference to venesection. This cannot always be done owing to the nausea induced, but where it is possible the withdrawal of blood had better be avoided.

In many cases, however, it becomes absolutely necessary to have recourse to the lancet, especially when the chest becomes involved. Under such circumstances, it is right most carefully to watch the effect of bleeding, and never to lose sight of the fact that we are merely treating a complication of a dangerous disease, and that while we are conquering the inflammatory mischief we must as much as possible husband the strength of our patient in order to enable him to struggle through the original dangerous malady.

As regards the use of mercury, though considerable pains have been taken by those well acquainted both with the use of the remedy and also those phases of the disease most likely to be relieved by its exhibition, yet on the whole it seems inadmissible to administer it, were it only for the single reason that it is so very apt to cause profuse salivation.

Those who have not had experience on this point will be unwilling to believe how small a quantity of mercurial medicine, even of the mildest kind, is capable of inducing salivation in this disease to a degree calculated greatly to debilitate the patient. Even a single purgative containing calomel has been known to induce dangerous salivation. In the latter stages of albuminuria, great mischief has often been done by ignorance on this point.

In the chronic form of albuminuria, the remedy I have generally found most advantageous as a purgative is elaterium, and it is surprising how completely the dyspnoea and misery caused by effusion can sometimes be relieved by the action of this drug, and, moreover, how greatly it seems to assist the power of diaphoretics, and other means directed to that great emunctory, the skin. The use of counter-irritation, in the form of seton or issues, I have great reason strongly to urge upon you in chronic stages of Bright's disease. They occasionally expedite the cure, though it is necessary that the discharge produced should not become excessive; for we may, by neglecting this precaution, add another to the great cause for degeneration of the blood which already exists in the presence of the disease itself.

When the tendency to the inflammatory character appears decreased, and the patient no longer suffers from pain in the loins, and all the active symptoms are abated, I know of no remedy capable of producing such salutary effects as are to be obtained by the administration of iron. The therapeutical action of this drug, in all its forms, is doubtless exerted on the blood, and its beneficial effect produced precisely as it is in anaemia, when arising from other causes than disease of the kidney. It appears to supply material for the formation of the red colouring matter, which we know contains iron, and which becomes deficient during the progress of albuminuria.

I do not believe it matters much what preparation of the metal is administered, so long as we avoid the more insoluble forms. The hydrated oxide, as it exists in the mixture ferri composita, is easily soluble in the stomach, and I find it to answer extremely well in these cases. If the mixture cannot be retained without inconvenience to the patient, some of the more palatable preparations may be tried: the best among these is perhaps the ammonio-citrate of iron given in soda or Seltzer-water three or four times in the day, while a mild nutritious diet is allowed during convalescence.

UNIVERSITY OF LONDON.

FIRST EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE, 1847.

THE following is a list of the candidates who have passed this examination:—

First Division.

Ball, Richard Dechamp, University College.
Beck, Thomas Snow, University College.
Black, C., Edinburgh School of Medicine.
Bramwell, Charles C., University College.
Bridgwater, Thomas, King's College.
Chuckerbutty, Soorjoo C., University Coll.
Clapp, W. T. G. W., University College.
Cubitt, George Robert, King's College.
Devenish, Samuel Weston, Guy's Hospital.
Drew, J., Royal Manchester School of Med.
Griffith, Samuel, King's College.
Jago, Frederick W. P., London Hospital.
Lynch, John Cox, King's College.
Morris, James, University College.
Shelley, Hubert, Guy's Hospital.
Willett, Josiah, Guy's Hospital.

Second Division.

Bailey, James, University College.
Franklyn, Edward J., University College.
Green, T., Royal Coll. of Surg. in Ireland.
Kingdon, G. R., St. Bartholomew's Hosp.
M'Crea, William, St. George's Hospital.
Parfitt, Henry, King's College.
Sankey, W. H. O., St. Bartholomew's Hosp.
Whitaker, E., Royal Manchester School of Medicine.

ON
CHEMISTRY AND THE MICROSCOPE

IN RELATION TO
PRACTICAL MEDICINE.*

By GEORGE E. DAY, M.A. & L. M. Cantab.

Member of the Royal College of Physicians,
Lecturer on Animal Chemistry and Histology
at the Middlesex Hospital School, and Physi-
cician to the Western General Dispensary.

LECTURE I.

The chemical constituents of the animal organism.—Their division into the inorganic and the organic.—Subdivision of the inorganic group into (1.) those which are serviceable from their physical properties—water, phosphate of lime, carbonate of lime, phosphate of magnesia, fluoride of calcium, and silica;—(2.) those which effect important objects by their chemical actions—chloride of sodium, chloride of potassium, phosphate of soda, phosphate of potash, carbonate of soda, carbonate of potash, chloride of calcium, and iron;—(3.) incidental constituents.—Reasons for the omission of certain substances.

GENTLEMEN,—My object in this course of lectures is to lay before you a sketch of the most important results which chemistry and the microscope have contributed to practical medicine. I shall not devote the present hour to an introductory address on the importance of such inquiries, for, were I to do so, my illustrations would have to be selected from the materials of other lectures in which they will occupy a more suitable and appropriate place; and, indeed, the value of such investigations is now so fully recognised by all enlightened practitioners as to render such an introduction to my subject altogether unnecessary.

At the risk of being deemed somewhat prolix, by those of you who have already devoted any attention to physiological chemistry, I shall commence with the consideration of the proximate elements entering into the composition of the animal body. These we shall divide into—

a. The inorganic or mineral constituents; and

β. The organic constituents.

The inorganic may be advantageously classed in three groups, comprising (1.) those which are of service in the animal body in consequence of their physical properties; (2.) those which effect important objects in the system by their chemical actions; and; (3.) those which being only incidentally conveyed into the organism exert no (apparent) important influence on it, and are speedily removed by the excreting organs.

I. *Constituents useful by their physical characters.*

1. *Water.*—The uses of this constituent are so obvious that I need hardly revert to them. We cannot imagine vitality without water, for we know of no organised body that can exist without moisture.* It is indispensable to life in consequence of its dissolving and suspending power. It is the medium of the support and nourishment of the whole organism, and not only conveys nutriment to every portion of the body, but carries away all useless and effete matters. Its value as a medium of suspension is obvious in the blood, lymph, chyle, and milk. It is the source of elasticity and softness in the animal tissues. Take a tendon and dry it; its elastic force is altogether gone; let it remain for a short time immersed in water, and it regains its original characters.

In addition to the water that exists free in the organism, there is a considerable quantity in a state of combination; it thus exerts not only a physical but a chemical action. It forms, as we shall presently see, hydrates of protein, of various salts, &c. Moreover it contributes to most of the transformations occurring in the body. It seems, for instance, to take a part in the conversion of uric acid into urea, as we shall show in a future lecture. The fats are the only principles occurring in the human body which are devoid of water, and even this statement is not universally true.

It is difficult, if not impossible, to ascertain the whole amount of water in the body; it is usually supposed to constitute about 9-10ths of the whole weight. The following table gives the per-centage of water in some of the most important fluids and solids of the body.

100 parts contain—

* Memes and some inferior animals may possibly be exceptions to this rule. See the experiments of Needham, Baker, Spallanzani, and Fontana, quoted by Tiedemann in p. 116 of the French Translation of his Physiology.

* This course was originally delivered in the School of Medicine adjoining St. George's Hospital, during the summer session of 1845. The rapid progress of animal chemistry during the last two years has rendered it imperative upon me to re-write many of these lectures, and to modify all.

Defibrinated blood.	Water.	The Observer.
The mean of 11 analyses of man's blood	79.9	Beesquere and Rodier.
The max. " "	80.0	Do.
The min. " "	76.0	Do.
The mean of 8 analyses of woman's blood	79.1	Do.
The max. " "	81.3	Do.
The min. " "	77.3	Do.
Human lymph	96.9	Marchand and Colling.
Human gastric juice	98.6	Berzelius.
Human saliva	98.9	Mittcherlich.
Human bile	86.0	Faruchs.
Vitreous humor of the eye	98.4	Berzelius.
Aqueous humor of the eye	98.1	Do.
Nasal mucus	93.9	Do.
Seminal fluid	90.0	Vauquelin.
Liquor amnii	87.7	Prost.
Morning urine	95.6	Stones.
Woman's milk, max	91.4	Do.
" " min.	86.1	Do.
Sweat	99.5	Amici.
Do.	98.2	Do.
Human brain	80.0	Vauquelin.
Parenchyma of liver	76.4	Boudet.
Muscular flesh	78.0	Marchand.
Bone.—The tibia	46.2	Do.
Cartilage of knee-joint	77.8	Chuvpud.

The enormous percentage of water in the constituents of the body, contained in the above table, affords sufficient evidence of the importance of this fluid in relation to animal life.

There is yet one point connected with water, in its relation to vitality, to which I would call your attention. Pure water is scarcely ever to be found on the earth's surface; it almost invariably contains more or less saline matter in solution. We shall see the use of this apparent impurity when we consider the importance of the salts in the animal organism.

2. *Phosphate of lime*, from its physical characters, undoubtedly stands next to water in the scale of importance. Phosphate of lime, or, as it is often called, bone-earth, consists of 8 eq. of lime and 3 eq. of phosphoric acid; its empirical formula*, therefore, is $8 \text{CaO} + 3\text{PO}_5$, but there can be no doubt that it is a compound of two tribasic phosphates of lime, $2 \text{CaO} \cdot \text{HO}, \text{PO}_5 + 2(3 \text{CaO} \cdot \text{PO}_5)$.

It is the chief constituent giving firmness and strength to bone; when it is diminished beyond a certain point, the bones yield to the actions of the muscles, and to the weight to which they are subjected, as we see in rachitis and osteomalacia, in which affections it has been shewn by analysis that there is a

great deficiency of this salt. The experiments of Chossat have directly shown that if phosphate of lime is altogether excluded from the food, the bones lose their firmness. Various pathological facts are illustrated by these experiments. You are aware that rickets is a disease most common at the period of dentition; may we not fairly assume that the teeth, having a greater temporary necessity for the phosphate of lime, prevent the due supply of that salt to the osseous system?

During pregnancy, the amount of phosphate of lime supplied to the fetal skeleton seems not unfrequently to leave an insufficient quantity for the osseous system of the mother. Hence the difficulty attending the treatment of fractures at this period; and indeed it not very unfrequently happens that fractures only imperfectly treated here, during pregnancy, become spontaneously disunited.

Phosphate of lime occurs, in a state of solution, in all the animal fluids—in the blood, the urine, and the milk; but in what manner it is held in solution we are not in a condition to decide. Some chemists, among whom we may range Berzelius, Gay-Lussac, Pelouze, and Mitscherlich, regard lactic acid as its universal solvent. But as free lactic acid certainly does not exist in the blood or milk, and as its occurrence in the urine is apparently disproved by the recent investigations of Liebig, we must look for a more satisfactory explanation. There are two facts that throw some light on this subject, and they are these:

* It was Berzelius who first determined the phosphate of lime of bones to be $3\text{CaO} + 2\text{P}_2\text{O}_5$. He now inclines to the belief that as it exists in bones it may have the composition $3\text{CaO} + \text{P}_2\text{O}_5$. Fiebig, u. Wöhler's *Annalen der Chemie und Pharmacie*, vol. lili, p. 205.

(1.) phosphate of lime dissolves in a solution of phosphate of soda, and (2.) it enters into a chemical combination (whose nature we do not clearly understand) with the protein compounds; casein, if not previously subjected to the action of an acid, contains on an average 7 per cent. of this salt, and albumen sometimes as much as 11 per cent. (Lehmann).

The analyses of the ashes of wheat, rye, barley, oats, rice, and of animal flesh, shew that this substance enters the stomach in the same form in which we find it in the solids and fluids of the organism. How is the portion that is requisite for nutrition taken up in a soluble state? I think that in this case we may adopt the opinion of Berzelius. Lactic acid undoubtedly exists in the gastric juice, and it appears most probable that it dissolves as much of the phosphate of lime as is required for the uses of the organism, whilst the remainder is carried off in an insoluble form in the feces.

3. *Carbonate of lime* forms the great bulk of the skeleton of the invertebrata, but it likewise occurs in greater or lesser quantity in the bones of the higher animals, and of man. In the *os sepiæ* it constitutes nearly the whole mass; in the oyster-shell it amounts to 98.5 per cent; while in the bones of man it usually amounts to 6 or 8 per cent. Its object, like that of the preceding constituent, is to strengthen the framework or skeleton of the system; and, when one is deficient, the other is usually increased.

There are apparently two distinct modes by which carbonate of lime enters the system. In the first place, spring-water, containing carbonic acid, usually holds a considerable quantity of this salt in solution; and secondly, many sorts of vegetable food contain combinations of organic acids (malic, tartaric, citric, acetic, &c.) with lime, which become converted in the organism into carbonates; in all probability through the influence of the oxygen taken up in the process of respiration. Thus, tartrate of lime expressed symbolically is $C_4 O_8 H_8 + Ca O$. If to this we add 5 atoms of oxygen, we can form the equation $(C_4 O_8 H_8 + Ca O) + 5 O = Ca O, CO_2 + 3 CO_2 + 2 H_2 O$ = 1 at. carbonate of lime + 3 at. carb. acid + 2 at. water.

I am far from asserting that this equation expresses what actually takes place. It seems, however, to shew the general nature of the change, the 3 at. of free carbonic acid possibly being employed in retaining the carbonate of lime in solution. In fact, this constituent must be dissolved and conveyed over the system to the different parts in which it occurs, in one of the three following ways:—either by the free carbonic acid, by the solvent influence of chloride of sodium, and other alkaline salts (as shown

by Guiton-Morveau), or, finally, in a state of combination with certain organic matters, as albumen, fibrin, and casein.

4. *Phosphate of magnesia* seems to be invariably associated with phosphate of lime, although sometimes it occurs in mere traces. It is found in the bones, teeth, blood, and milk; likewise in the shells of birds' eggs. We obtain our supply of it from the *cercalia*; in fact, there is no plant of the order *Gramineæ*, whose seeds do not contain magnesia; but as the system requires only a small quantity, the great proportion of it is carried away by the feces. A certain amount is also being constantly removed by the kidneys.

5. *Fluoride of calcium* is present in the animal organism in extremely small quantity, but it is so constantly found in the teeth and in the bones that we must regard it in the light of an essential constituent. In the dentine of a human tooth Berzelius found 2.1 per cent., and in the enamel (of the same tooth) 3.2 per cent. of this constituent. It is by no means improbable that the peculiar hardness of the latter constituent is dependent on the large amount of this constituent. It appears to form about 1 per cent. of human bone. It has been recently shown by Dr. George Wilson* to occur in the blood, milk, and urine, in sufficient quantity to corrode glass; it had, it is true, been previously noticed in the urine by Berzelius, but subsequent observers had failed to detect its presence, and had even ventured to impugn the accuracy of that chemist. I may add, that fluoride of calcium has been discovered by Middleton† to occur in the shells of the marine mollusca, and has been found by Silliman‡ in calcareous crystals. Its presence in fossil bones will be especially noticed in my lectures on the osseous system.

There are two sources from which man and animals may derive their fluoride of calcium,—namely, water and solid food. Until the publication of the admirable memoir of Dr. George Wilson, to which we have already referred, fluoride of calcium was regarded as totally insoluble in water. It is true that it had been detected in a few mineral waters; in those of Carlsbad by Berzelius,—in those of Gastein, in the Tyrol, by Hünefeld,—and in those of Lukatschowitz, in Moravia, by Planiva; and that Middleton had found it in the London pipe-water, and in three other waters, yet these isolated observations seemed not to influence the general opinion regarding the insol-

* Transactions of the Royal Society of Edinburgh, vol. xvi. Part 2. Edinburgh, 1846.

† Philos. Mag., No. 144, p. 14.

‡ On the Chemical Composition of Calcareous Corals, by B. Silliman, jun.; American Journal of Science, vol. i. 3d Series.

bility of this salt. Dr. Wilson has, however, established beyond all doubt the presence of fluoride of calcium in the well-water of Edinburgh, and in sea-water (from the Frith of Forth). Hence, with the water used as an article of drink, we may imbibe a small quantity of fluoride of calcium in solution.

There are few of our ordinary articles of food in which fluoride of calcium has yet been detected; it has, however, been found in barley by Will, in potashes (and consequently in the young and succulent branches from which they were obtained) by Wilson; and we have already shown that it exists in milk and blood, and consequently we may assume its presence in the flesh.

6. *Silica*, in so far as man and the mam-

malia are concerned, has no claim for consideration in this place. It has been found by Berzelius and Lehmann* in human urine, and is not a very rare ingredient of urinary calculi in man. Marchand† has found it in the blood, Fleisch† and Bley§ in gall-stones, Mitscherlich|| in the saliva, Fourcroy and Vauquelin¶ in the bones of oxen, Marchand** in the bones of the *squalus cornubicus*, Vauquelin†† and Van Laer in the hair, and Chevreul‡‡ in wool.

It is in birds that we begin to see the importance of silica to the organism; in their feathers it exists in large quantity, and is doubtless the source of their firmness and rigidity. The following determinations of the amount of this constituent have been recently made by Gorup-Besanez.§§

	Silica in	Beard. 100 parts of ash.	Quill. 100 parts of ash.
White feather of goose . . .		38·46	18·66
Black feather of magpie . . .		40·00	
Green and blue parrots' feathers .		22·45	
Black feathers of stork . . .		30·95	

The mean amount of silica in the beard of feathers was 1·27 per cent., or 32·96 per cent. of the ash,—a quantity far too large to be regarded as incidentally present. These observations led to an analysis of the blood of fowls by Dr. Henneberg,* who found no less than ·96 per cent. of silica in the ash yielded on incineration.

Proceeding far lower in the scale of creation, we find the increasing importance of silica. It appears as the essential constituent of the frame-work of the infusoria. Ehrenberg has shewn that extensive mineral deposits are composed of the silicious shields of a species of *navicula* which seems to differ very slightly from those now existing. In the *alcyonia*, and in *sponges*, silica is also abundant.

The origin of the silica in the animal body is sufficiently obvious. Traces of silica are found in most waters; and there are waters—the boiling springs of Geyser and Reikum in Iceland—in which (in the form of silicate of soda) it forms nearly one-half of all the solid constituents. It is likewise a constituent of many of our articles of vegetable food. From the following experiment instituted on himself by Lehmann, it appears that the absorbents and veins of the intestinal canal have very little power of taking up this substance. After taking a solution of an alkaline silicate, he found the merest trace of silica in a large quantity of his urine; the great mass of the substance, in an isolated state, being carried off in the feces. As soluble substances are usually carried off by the kidneys, it is probable that the free acid of the gastric juice decom-

posed the silicate and liberated the insoluble silica.

II.—*Constituents effecting important objects in the system by their chemical actions.*

1. *Chloride of sodium* occurs in greater or less quantity in every fluid and solid of the body. Its principal uses in the blood seem to be to prevent the solution of the blood-corpuscles, to hinder the tendency to coagulation, and to contribute, in a manner we shall presently explain, to the formation of one of its most important constituents—the phosphate of soda. Again, another great object for which this and other salts exist in the animal kingdom is to limit to a greater or less degree, and to modify, the change of tissues which in many cases would proceed too rapidly if these salts were wanting. When we come to the subject of digestion, I shall point out to you the influence that has been attributed to this salt in that process. The sources from which the body obtains its supply of salt are almost too obvious to require comment; although most of our foods and drinks contain it, the body has seldom a sufficient supply, and hence nature has endowed us with an appetite for it. It is

* Lehrbuch der Physiologischen Chemie, von Dr. C. G. Lehmann, vol. i. p. 155.

† Lehrbuch der Physiologischen Chemie, von Dr. R. F. Marchand, p. 14.

‡ Kastn. Archiv, vol. viii. p. 300.

§ Journal für prakt. Chemie, vol. i. p. 115.

|| Pogg. Annal. vol. xxvi. p. 320.

¶ Annales de Chimie, vol. lxix. p. 190; and vol. lxxii. p. 282.

** Marchand, op. cit. p. 97.

†† Annales de Chimie, vol. lviii. p. 41.

‡‡ Comptes Rendus, 1840; Prem. Sem. No. 16.

§§ Liebig u. Wöhler's Annalen, Jan. 1847.

* Ibid. Feb. 1847.

being constantly removed by the kidneys, and requires, therefore, to be supplied from without to an equal amount.

2. *Chloride of potassium* occurs in all the animal fluids, and, until recently, has been regarded similar, as far as its uses are considered, to chloride of sodium. The recent investigations of Liebig* lead, however, to the conclusion that there is an essential difference in the uses of these salts. He shews that the juice of flesh contains an abundance of potash-salts (phosphate of potash and chloride of potassium); while in blood and lymph the soda-salts (phosphate of soda and chloride of sodium) predominate: in fact, he regards the idea that the juice of flesh (unmixed with blood and lymph) may possibly contain no soda, as by no means destitute of probability. Again, in the milk of the cow (and probably in milk generally) the salts of potash preponderate greatly over those of soda, and are likewise present in much larger quantity than in the saline constituents of the blood of the same animal.

In 100 parts of the ash of cow's milk, Haidlen† found—

	1.	2.
Chloride of potassium . . .	29.4	27.1
Chloride of sodium . . .	4.9	5.0
Soda	8.6	6.7

While in 100 parts of the ash of the blood, Erdert† found—

Tribasic phosphate of soda . .	16.769
Chloride of sodium	59.340
Sulphate of soda	3.865
Chloride of potassium	6.120

The source of the potash-salts in the organism is to be chiefly sought for in the ordinary articles of vegetable food.

3. *Phosphate of soda* occurs in considerable quantity in the blood, chyle, milk, and urine: in fact, almost the only fluids in which it does not occur are the gastric juice and possibly the juice of flesh, which, according to Liebig‡, are nearly, if not quite, identical. It is chiefly formed by the action of phosphate of potash on chloride of sodium. But, before entering into particulars with regard to its mode of formation, I must trouble you to follow me over a few chemical facts regarding the salts of phosphoric acid.

You will recollect that common or tribasic phosphoric acid forms three different salts with alkalis; two of these in solution have an alkaline, and the third an acid reaction.

When a salt of phosphoric acid with 3 atoms of fixed base—as, for instance,

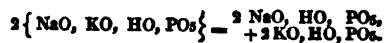
3 NaO, PO₅, which is strongly alkaline—is mixed with neutral nitrate of silver, we have a yellow precipitate, and the alkaline reaction disappears.

The salts of tribasic phosphoric acid with 2 atoms of fixed base and 1 atom of water (as 2 NaO, HO, PO₅), have also an alkaline reaction, and give a similar precipitate with neutral nitrate of silver, but an acid reaction is left. On heating such a salt with an alkaline carbonate, the carbonic acid is expelled, and we again have produced the salt 3 NaO, PO₅; and, on igniting it (alone), a pyrophosphate or bibasic phosphate (as 2 NaO, PO₅) is formed, which, when dissolved in water, exhibits an alkaline reaction, and gives with neutral nitrate of silver a white precipitate, the mixture being neutral.

The salts of tribasic phosphoric acid with 1 atom of fixed base, and 2 of water (as NaO, 2 HO, PO₅), have a strong acid reaction, and give a yellow precipitate with neutral nitrate of silver, the mixture remaining acid: when ignited, they become converted into metaphosphates or monobasic phosphates. The metaphosphate of soda is freely soluble in water, from which neutral nitrate of silver throws down a white precipitate, soluble in an excess of the test.

If you will bear these distinctions in mind, you will soon see their application in determining the nature of the phosphates occurring in the ash yielded by several of the animal fluids and tissues.

Let us now consider the action of chloride of sodium on the tribasic phosphate of potash with 1 atom of fixed base. The salt, KO, 2 HO, PO₅, has, as we have already mentioned, an acid reaction, and very readily loses half its amount of base. If tribasic phosphoric acid be neutralized with potash, and chloride of sodium added to the solution, and the whole left to spontaneous evaporation, a phosphate crystallises, which contains both potash and soda, while chloride of potassium is found in the mother liquid. This tribasic salt is represented, according to Liebig, by the formula NaO, KO, HO, PO₅; but, as Dr. Gregory suggests,* it may equally well be represented as a double salt, composed of phosphate of soda and phosphate of potash.



“In this way,” says Liebig, “we can understand the formation of phosphate of soda in the body of an animal which obtains its food, along with phosphate of potash, or earthy phosphates and salts of potash, no compound of soda, except chloride of sodium; and when, in inland countries, the food does not contain common salt enough to produce

* Researches on the Chemistry of Food, p. 108.

† Simon's Animal Chemistry, vol. ii. p. 63.

‡ Ibid. vol. i. p. 248.

§ The Chemistry of Food, p. 128.

* Liebig, op. cit. p. 111, Note.

the phosphate of soda necessary for the formation of the blood, then more salt must be added to the food. From the common salt is produced, in this case, by mutual decomposition with phosphate of potash, or with earthy phosphates, the phosphate of soda of the blood." I shall enter fully into the consideration of the uses of this salt in my lectures on the blood; I may, however, at once mention that Liebig regards the phosphate of soda as the constituent to which the blood owes its power of absorbing, and giving off carbonic acid. Moreover, this salt has a remarkable solvent power; it dissolves casein and albumen, and even a certain amount of phosphate of lime; and, further, its relation to the uric and hippuric acids, occurring in the urine, are of the highest importance. I shall revert to this subject when I have to speak of the causes of the acidity of the urinary secretion.

4. *Phosphate of potash*, as we have already mentioned, exists in considerable quantity in the juices of flesh. We have nothing further to add, regarding its uses, to what we have already mentioned; it occurs in wheat, and in most articles of vegetable food.

5. *Carbonate of soda* is a frequent ingredient of the ash yielded by the incineration of the animal solids and fluids. It is at present a disputed point, whether or not this salt exists in the blood; it is found in small quantity in the urine of the herbivora, and is always to be detected in human urine after the use of a vegetable soda-salt, as the citrate, tartrate, malate, &c. From the presence of an alkaline carbonate in the ash, we have no right to conclude that it pre-existed in the substance under examination.

6. *Carbonate of potash* is present in the urine of the herbivora, and in that of men after the use of vegetable potash-salts. In small quantities it is not unfrequently associated with the preceding salt in the ash yielded by animal matter.

7. *Chloride of calcium* has been found in considerable quantity by several chemists in the gastric juice of dogs, and Berzelius* has detected its presence in the same fluid in man. Mitscherlich found 0.18 p. c. of this salt in the ash of human saliva. Why it is only found in these fluids, and what are its uses, are points on which we are perfectly ignorant.

8. *Iron* exists in all classes of animals†—in the mammalia, fishes, mollusca, infusoria, &c. It occurs in at least two distinct forms, (1.) as an organic compound in the colouring matter of the blood, and, probably, also in a somewhat analogous state in horny tissue

and hair; and (2.) in an oxidized state, and combined with hydrochloric and phosphoric acid in the urine. The latter is probably derived from the decomposition of the former. There is not a tissue or fluid of the body in whose ash traces of iron may not be detected. There is still much obscurity regarding the actual uses of iron in the organism; but its constant and regular occurrence in the blood, in which it forms about 7 p. c. of the colouring matter, and in the milk, and in eggs, in whose ash it occurs as phosphate of iron, is a sufficient evidence that it has a function,—probably, a very important one—to perform. It is taken into the system with most of the articles of solid and liquid food. Small quantities are being continually removed by the kidneys; but when taken medicinally in full doses, the greater portion is carried off, in the form of black sulphuret, with the *feces*.

III. *Constituents which, being only incidentally conveyed into the organism, exert no (apparent) important influence on it, and are speedily removed by the excreting organs.*

A mere enumeration of the substances entering into this class will be sufficient:—They are carbonates of magnesia, manganese, alumina, copper, lead, and possibly, in some instances, bromine, iodine, titanium, &c.

You will observe that in this arrangement I have altogether excluded the alkaline sulphates; I have done so because they do not occur in the animal body, except in the fluids and solids intended for excretion, as the urine, sweat, and *feces*. When they are found in the ash, they are frequently the result of the oxidation of sulphur during the process of combustion and incineration.

It may likewise seem strange that I have omitted to notice hydrochloric acid in my second division, but recent investigations have rendered it almost certain that it does not exist in the gastric juice, or in any other fluid, in a state of freedom; and a similar remark may be made respecting hydrofluoric acid, which has been stated to exist in the gastric juice of birds.

In my next lecture, I shall give you a few rules with regard to the simplest mode of testing qualitatively for the various ingredients that we have been this morning considering.

THE ASTLEY COOPER PRIZE.

THE triennial prize of £300, founded by the late Sir Astley Cooper, has been awarded this year to Dr. Richard Halahan, for his essay on "The Uses and Structure of the Suprarenal Capsules."

* Jahresbericht, 1837. p. 379.

† Marchand, op. cit. p. 16.

Original Communications.

ON SOME POINTS IN THE
PATHOLOGY AND TREATMENT
OF
TUBERCLE OF THE LUNGS.BY WILLIAM HERRIES MADDEN, M.D.
Physician to the Torbay Dispensary, Torquay,
Devon.

It may seem strange, that in the present advanced stage of medical science, when the accumulated experience of centuries should have thrown a truth-revealing light upon a disease that is so constantly before every practitioner, the question—what is tubercle?—has never yet received a perfectly satisfactory answer. And yet, such is the acknowledged fact, and it proves, beyond dispute, how great are the difficulties that environ this subject. Chemistry, with all the refinements of modern analysis, has been sedulously applied to the task; observant eyes have peered curiously through the best constructed glasses; the scalpel of the anatomist has traced out, we might almost say, its every possible habitat; still our minds remain unsatisfied, and the hesitation of uncertainty too often bewilders our therapeutic efforts. I am not vain enough to imagine that I can do what others have failed to effect, but, believing that it is in the power of every inquirer to help forward the investigation in some measure, however small, I would solicit attention to the following remarks, the result of frequent and anxious thought, and of considerable practical experience.

It is quite needless to occupy either time or space by describing what is familiar to us all,—the varied appearances presented by tubercle to the naked eye,—appearances which, for the most part, depend upon accidents of position, rather than intrinsic properties, and which, therefore, in no way tend to elucidate the real obscurities of the subject. It is with the *actual nature* of this morbid product that we are concerned, and to the researches of chemistry, and the revelations of the microscope, interpreted in their meanings by the principles of a sound physiology, must we look, chiefly, for an answer.

The fullest account of the chemical constitution of tubercle that I have yet seen, is to be found in Dr. Glover's recent, and most valuable, *Essay on Scrofula*, and to it I would refer my readers for all details. The essential facts for us to know, are, that it has a protein basis, of an albuminous, and, probably, in part, of a caseous nature; and that it differs from plastic or organisable lymph, in containing more watery parts, more fat, and more extractive matter; the bearings of which on our argument will be seen afterwards.

I have made repeated examinations of tubercular matter from the lungs, with a magnifying power of 470 diameters linear, and the results obtained are closely similar to those arrived at by Dr. Lebert.* I found the mass to be composed of an immense number of very minute spherical granules, intermingled with corpuscles of a peculiar appearance. These latter were of considerable, though very variable, size; their outline was well defined, though irregular, and they had an angular aspect; when moving through water, it was evident that their shape approached that of an irregular polyhedral sphere, instead of being disk-like, as the globules of pus and mucus. When treated with acetic acid, they became transparent, and showed granules in their interior, and projecting through the cell-walls. I could not satisfy myself of the existence of nuclei; I believe they are not present in the true tubercle corpuscles. In a tubercular mass they lie in close approximation by their edges, and in innumerable layers; they vary much in shape, but can be readily recognized when once their characters have been clearly made out in a disintegrated portion.

Some little difficulty was experienced at first, from the presence of epithelium scales, which bear a considerable resemblance to them at first sight, and, I doubt not, have been frequently mistaken for what I con-

* I have never had an opportunity of seeing Lebert's work, and am only acquainted with his illustrations from the copies in the works of Glover and Phillips, both published in 1846. My own observations and drawings were made in 1844, but the representations of the corpuscles described in the text, could scarcely have been more exactly similar had I copied them from the published plates,—a tolerably good proof that we saw the same things.

ceive to be the true and essential corpuscle. More close inspection removed this obscurity, chiefly by showing the flatness of the scale, and the spherical shape of the corpuscle, when lying separate from other parts.

I tried the effects of several reagents upon these bodies, but without arriving at any very remarkable conclusions. Their transparency is increased, after a time, by a concentrated solution of iodide of potassium; but there is no change of shape, and no development of nuclei; some treated in this way were marked by minute and very black spots.

When floated in pure naphtha, they have a striking mulberry-like appearance, this aspect being caused by rounded prominences of the cell-wall. Some of them gave the idea of being about to split up into granules, like those which form the great mass of the tubercle. Naphtha is an excellent medium for observing the corpuscles, their general contour and appearance being rendered peculiarly distinct by it.

Tincture of iodine produced no change beyond that of coloration.

In a mass taken from the lung, we have, besides these oil globules, frequently crystals of cholesterine, and, of course, fragments of the natural tissues; but from the very strict accordance of what I have seen myself, with the more extended observations of Lebert, Bennett, Glover, and others, I feel about as fully convinced, as the nature of the subject will allow, that what I have above described are the essential elements of tubercle.

I have had no opportunity of ascertaining the exact locality of the morbid deposit when first it invades the pulmonary organs; in advanced stages of the disease, it seems to me that all the textures are implicated,—a section has an almost homogeneous appearance, and it is only here and there that we find traces of the normal structure, and can discover the faint outline of the air-cells.

In regard to these cells, I would remark in passing, that I have never seen anything at all like the descriptions given by Reisseisen; the tubes merely undergoing a slight expansion at their extremities. I thought I could discern the cross fibres described by Mr. Bowman; but on this point I cannot speak with confidence.

What, then, are these tubercle corpuscles?—Dr. Addison, of Malvern, regards them as altered epithelial scales. I cannot think that this view is correct; the difference in shape, and the absence of nuclei, appear to me to render such an hypothesis untenable. They certainly bear more resemblance to pus globules; but their natural history, if I may so speak, forbids us to adopt the opinion, upheld by a very few observers, of their identity with that secretion. Is it not more probable, more in accordance with analogy, to suppose, that as they are possessed of certain specific and defined external characters, so they should also have a distinct and separate nature of their own. A lymphatic gland, in a healthy man, becomes inflamed as the result of some irritation, simple or specific; an abscess follows, the matter is discharged, and the part recovers its healthy condition; a like series of events takes place in a tuberculated gland, and we have a sinus which resists all our efforts to heal.

To the inflamed skin that covers a non-malignant tumor, we apply leeches for the relief of the engorged vessels, and we gain our point; follow the same plan with a malignant growth, and, in all probability, the bites will become the seat of incurable ulcerations.

A patient is affected with tubercular disease of a joint: the limb is removed, and some time after, to the great disappointment of his friends, he dies of pulmonary consumption, and the lungs are found full of the same deposit which had been previously discovered in the amputated bones. Another presents himself with a carcinomatous tumor, involving the extremity of one of the long bones; as a last hope, the leg, or arm, as it may be, is cut off. But the effort proves futile, and, after no long period, he succumbs to his malady, and his lungs, or his liver, or some other internal organ, are seen crammed with secondary carcinoma.

Why should the principles which guide us in explaining these phenomena be so various?—Why should we believe that the untoward events observed in the one set are caused by the specific nature of the microscopic elements of the cancer-growth, and deny the existence of analogous, I do not mean similar, inherent properties

in the tubercle cells? It appears to me that the evidence is identical in both; that the occurrences alike testify to the workings of a blood-disease. There is, unquestionably, a difference, and a marked one, between the two cases. Cancer-cells have, as an essential part of their constitution, the faculty of reproduction; they are, in fact, nucleated bodies, which continually and spontaneously generate an indefinite number of successors; and it is thus the tumors which they form grow and increase; and thus, too, the disease spreads through contiguous textures. Of tubercle corpuscles we cannot affirm the same things; they are a-nucleate, and, as far as we know, are utterly incapable of originating any descendants. But this fact does by no means invalidate our argument, that the fountain of the two diseases is alike a vitiation of the blood, and that the phenomena presented by both are what they are simply because the morbid elements have a certain determinate and altogether specific character.

Confine purulent matter as long as you please in a healthy, i. e., a non-scorfulous, body,—leave an empyema, for instance, to nature, and, if the patient do not die from want of right measures of relief, the effused fluid will remain pus to the last drop. Set up inflammation in a scorfulous subject, and, in nine cases out of ten, you have tubercle mixed with the true pus.

A healthy man has pneumonia; it passes into the second stage, and the affected portion remains consolidated for a greater or less period of time, but the issue is perfect recovery at last. A scorfulous subject has the same disease, advancing to the same stage; and the end is, death by phthisis.

These things are inexplicable upon any other principle than the one we have laid down; with it the reason is as clear as daylight. In either instance the germs of the disease are present, and remain in the circulating fluids, and the results are what we observe, simply because such is the case.

I do not, of course, mean to affirm that the removal of a scorfulous joint is invariably followed by the development of phthisis; nor yet that the chances of perfect recovery stand in the almost hopeless position which

they occupy, when cancerous diseases are the subject of experiment; the experience of every day happily refutes such an idea. But it is a fact, that such has too often been the end of the best-planned and best-executed operations, and the rationale of the occurrence is the specific vitiation of the blood, which, being general, has not been removed with the originally offending member.

What, then, is this vitiation?—in other words,—what is the particular departure from the normal state of the system, which leads to the deposition of tubercular matter? To answer this question, it will be necessary to attend, for a little, to the nature of healthy nutrition; for indistinct views upon this point will inevitably lead to confusion in our pathological deductions.

The researches of modern physiologists have, I think, conclusively shown that the organic constituents of every part of the animal body have an individual life of their own; i. e., they are placed in their proper, destined, locality,—grow,—attain full maturity, perform certain definite functions,—decay,—die,—and finally are thrown off as useless matter, the removal of which is essential to the well-being of the living whole. These depositions, active workings, decline, and rejection, are carried on in an endless circuit so long as the animated frame, which is their theatre, retains its faculties unimpaired. And to meet such constant, never-ceasing demands, a regular supply of proper food is absolutely requisite. Diminish the quantity, or impoverish the quality of this food, and, sooner or later, as an inevitable consequence, nutrition fails. Let the body be attacked by disease, and thus, to a certain extent, rendered incapable of appropriating to its use the materials offered, and the same result follows, though the full and right provision be constantly afforded.

Now, it appears that albumen is the essential constituent of whatever fluid is absorbed for the nutrition of the tissues*; but it has no tendency to become organised until it has undergone a further change, and become converted into fibrin. This elaboration is a purely vital act; it can take place only in the living body, and is greatly

* Carpenter: Principles of Human Physiology, 2d edit. p. 478.

influenced in the rapidity and perfection of its performance by many external as well as internal agencies. This change commences in the absorbent system, and is continued in the blood, the colourless corpuscles of the latter being, in all probability, the agents which effect their conversion*. The oleaginous ingredients of the chyle, and the fat absorbed by the lymphatics from the adipose tissue, must be albumenised by the acquisition of a due proportion of azote from the blood before they can subserve the purposes of nutrition; and this is probably effected chiefly in the lymphatic glands, though in part also by the *vasa vasorum* of the absorbents themselves.

It is clear, therefore, that whatever interferes with this great and fundamental change must, of necessity, produce a state of impaired nutrition. And it is equally evident that the tissues formed, or the materials deposited for the formation of tissues, from such imperfectly elaborated elements, must be in their nature faulty, and inadequate for the discharge of their proper office. Have we not this state of matters in that condition of body in which tubercles are developed?

For what is the tubercle deposit? In chemical character we have seen that the mass has an albuminous basis, and that it differs from plastic lymph in being more watery, having more fat, and more of those indefinite animal principles which are included under the name of extractive matters; all which evidence an ill-concocted, inefficiently-vitalised product. In its physical characters, as revealed by the microscope, we have seen that it is made up of an infinite number of minute granules, and of certain peculiar corpuscles, which also are granular and devoid of nuclei—which, in fact, have no appearance of being in any way possessed of active propagating power. Do not these things tell the same story? Do they not say to us, that they originate in the deficient energies of the circulating fluids, and are themselves abortive, because the stock from which they are derived is palsied in its procreating faculties?

Let us look a little further, and gather in confirmation from another

source. A healthy membrane, in a healthy body, is subjected to some irritation, and, as a consequence, the process of inflammation is set up. The white corpuscles in the blood passing through the vessels of the part are greatly increased in number; they stagnate along the vascular parietes, become entangled in their fibres, burst, and discharge their fluid contents through these coats to the exterior. This effusion is coagulable lymph: it is very rich in fibrin, and, after a time, is seen to contain certain bodies called exudation-corpuscles, which are the germs of cells that, in the progress of events, will form a new organised tissue, or, under untoward circumstances, degenerate into pus-globules. Change, now, one link in the chain, and suppose that the same occurrences take place in a scrofulous subject. Up to a certain point, the phenomena are precisely identical; there is the same increase of white corpuscles, the same effusion; but the nature of the effused matter is altered, the fibrin is deficient in plasticity, and instead of the true active exudation-corpuscles, we have either pus or tubercle, and no new organism makes its appearance. This would seem to be the explanation of those cases of phthisis to which Dr. Addison, of Guy's Hospital, has applied the epithet *pneumonic*: inflammatory in their origin, they run into the tubercular form by reason of an inherent vice in the constitution.

But in the unirritated, uninfamed lung, there is a continued series of active changes going on; a restless movement of organic elements incessantly passing through the varied stages of their little lives; mucus-cells filling out with their peculiar contents, and bursting for their evacuation; epithelium-scales laid down in their respective localities, to remain there a little space, and be then pushed off by their successors; old fibres yielding to new ones; long-used membranes giving place to such as are fresh formed; and all this at the expense of the blood, the common fount, the universal parent of the whole. In health this complex process is effected easily, and with the most perfect regularity. Those marvellous elective affinities which have been impressed by the God of nature upon the living constituents of the animal frame, are unerring in their

* Ibid. p. 204, et seq.

operation; and the required ingredients are systematically appropriated by the parts which need them, and by these alone. Vitiate the source, however, and the streams cannot remain pure. Supply imperfect materials, and the vital laboratories fail to educe right results. And this is what occurs too often. The blood, impoverished in its elements, with its fibrin half finished—if I may use the term—flows into the lungs, and then yields up as before the portions needed for the repair of wasted structure. But, itself unhealthy, it cannot minister to healthy nutrition, and the matter poured out, instead of being worked up into tissue, remains as it was excreted—an aplastic, or, at the best, a cacoplastic mass. Tubercle takes the place of living structure, and one of the most important organs in the body becomes increasingly embarrassed in its all-essential functions.

It has been affirmed that this deposition of tubercle is an effort of nature to save life, by arresting the decomposition of the lung-tissue, under the wasting influence of atmospheric oxygen. I believe nature is never guilty of such egregious blunders; that she would never attempt to arrest a blood-disease by damaging one chief purifier of the blood; nor seek to retrieve defects of nutrition by blocking up that organ in which the final vitalising influence is impressed upon the nutritive fluids. Man's half-blind theories may need such suppositions for their consistency, but truth is not in these crude imaginings.

But is it a sufficient answer to the question,—what is the origin of tubercle?—to say, in general terms, impaired nutrition. I think not. Nutrition, defective from its very commencement, we have in every case of severe dyspepsia; but all dyspeptics are not also the subjects of tubercular disease. Mal-assimilation plays an important part in numberless maladies, in the entire course of which, even to a fatal termination, not one speck of tubercle is deposited. It appears to me proved that tubercle is the result of an abnormal condition of those transformations which are essential for the well-being of the animal body, but not of every abnormal condition. It is a special disease, and owns a special parentage.

Of the intimate nature of this pe-

culiar aberration from the healthy condition, I dare not presume to speak definitively, any more than I could say why cancer cells should possess properties so destructive of life, and those which form the fibres of simple tumors be so entirely innocuous. The facts are certain, though the rationale be hidden. And it is the same with tubercle. We see that the blood-fibrin is not thoroughly elaborated;—that the albuminous elements have not undergone that change which would have converted them into organisable principles; and that, as a result, a peculiar form of granular matter and of granular corpuscles is deposited;—but we cannot go any farther than this, nor affirm what the specific defect, or specific modification as it may be, of the energising vital powers actually is. We have the termination before our eyes, but the steps remain involved in darkness.

The fact that the disease is, in a vast majority of cases, hereditary, and that tubercle has been detected, though but rarely, in the foetal body, is conclusive evidence that the morbid impression of which we speak may, and in these instances *must*, be communicated to the organic elements during the period of intra-uterine life. But whether there be any appreciable alteration thus wrought, we do not know.

Dr. Carswell has discovered tubercle in the interior of coagula contained in the cells of the spleen: a proof that the blood can itself give origin to this deposit, independently of any influences derived from the living solids. But analogy appears to me to favour the supposition that the degeneration of the blood is usually an effect, rather than a cause of the tubercular diathesis:—that it is inefficient for its duties, because the agents which form it are themselves defective in their operations. In fact, that the real essential change is to be sought in the blood-makers rather than in the blood.

Mr. Paget, in his interesting and profoundly philosophical lectures on Nutrition, delivered before the Royal College of Surgeons this present year, has endeavoured to show, and I think successfully, that each organic part of the healthy body serves, when first deposited, as an excretion; that the removal of its elements from the general circulating mass, fits the remainder for

the construction of other tissues. Now we have, I think, in this an explanation of what is otherwise somewhat difficult to understand, viz. the very early occurrence of emaciation in so many cases of phthisis pulmonalis. It is not due to the presence of fever, for at this period hectic has not set in. It is not caused by excessive evacuations, either, from the mucous membranes or the skin, for as yet the functions of these two tegumentary organs are discharged in an ordinary way. Nor is it dependent upon any manifest dyspeptic derangement, for at this stage of the disease the signs of such are often wanting. To say that it is a consequence of the tubercular diathesis, is to affirm what is true of itself, but not explanatory; for the diathesis existed from birth, and the emaciation only appeared when the abnormal deposit took place. But if Mr. Paget be correct, we can see at once that the separation of the imperfect substance tubercle from the blood, instead of the perfect tissue whose place it occupies, must of necessity render the remainder of that fluid, in measure, unfitted for its office as the great minister of nutrition;—it retains what it should have lost, or it has parted with more than it should have given up. It is not healthy, and it cannot, therefore, act with healthy energy. And exactly in proportion as this irregular process goes on, does the vitiation of the blood increase also; until almost all parts of the body, ill-nourished and ill-constructed, fall into a condition of more or less complete *marasmus*.

These remarks apply chiefly to that species of phthisis which creeps on insidiously, not as the sequel of any pre-existing disease. When the lung-affection is the result of inflammation, as pneumonia, or of that modification of the inflammatory process which goes by the name of catarrh; or when its first symptoms are manifested on the subsidence of any general malady, as the exanthemata, then the accompanying emaciation may be dependent upon other additional causes also; though still I believe what has been stated above is an important and essential part of the observed process.

[To be continued].

ON THE
CONSTRUCTION OF THE PLACENTA,
AND THE MODE OF COMMUNICATION
BETWEEN THE MOTHER AND
THE FÆTUS IN UTERO.

By FRANCIS ADAMS, LL.D., Surgeon.
Banchory.

[Continued from p. 198.]

PERIOD III.—*Opinions held by the physiologists of the 18th century, and more especially by Haller and the Hunters.*

ONE of the first steps towards the overthrow of the theory, which we have now been expounding, was taken by the anatomist Cowper, when he announced that the lacteals all terminated on the free surface of the intestinal canal by patulous mouths (*osculis hiantibus*)*. Following up these new views which he had adopted he straightway pretended to show, by mercurial injections, that the umbilical vessels in the placenta of a cow could be injected from the uterine artery.† Both these doctrines are advocated by Manget in his "*Theatrum Anatomicum*," published at Geneva, A. D. 1717 (vol. i. p. 306. v. ii. p. 139). He does not hesitate to declare it as his opinion that there is a transfusion of blood from the vessels of the mother into those of the fœtus, and a mutual circulation of the same between them. Noortwyk‡, Roederer§, Gibson of Leith||, and others, concurred in advocating these views. There were not wanting eminent men, however, who still stood up for the theory of Harvey, and denied the force of the objections recently stated against it by the authorities we have just mentioned. Among these the most celebrated was Dr. Alexander Munro *primus*, the father of academical medicine in Scotland, who, in his most interesting treatise

* I am not sure, however, that Cowper was the first to make this announcement—indeed, I suspect W. Cockburn must have preceded him. Cockburn, at all events, distinctly describes the lacteals as arising by open mouths in the intestinal canal: he says, "*Lacteorum vero orificia in intestina hiant, licet non sint satis spectabilia docet contenti succi color albicans, &c.*"—(*Economia Animalis*).

† See Drape's *Anthropologia*.

‡ *Uteri Anatom.* § 6, No.

§ *Icones Uteri humani, &c.* 1759.

|| *Edinburgh Medical Essays*, vol. I.

tise "On the Nutrition of the Fœtus," decidedly contends that there is no vascular connection between the uterus and placenta, and shows, most satisfactorily, how Noortwyk had fallen into the mistake of supposing that such a connection does exist. He states that he had examined the bodies of five women who had died with child, and that the following were the results: "In all of them I found a thick, fungous, succulent, cellular substance between the muscular part of the womb and its villous coat, through which numerous thin coated vessels passed, and in this cellular substance the sinuses were. Excepting its sinuses it resembled the internal coat of the intestines.* I was ignorant of this structure when I began the dissection of the first woman, and therefore when I cut through the firm muscular part of the womb, and saw this fungous substance, I imagined it to be the placenta. I was surprised to find the cohesion of this supposed placenta to the womb so firm; but persisted to separate the muscular part of the womb from it, till having torn a little off the fungous substance, I observed the smooth, tense chorion, from which the fungous substance separated most easily, as it did likewise from the placenta, by only gently pressing the ovum with one hand, and raising the womb with the other, without the assistance of any other instrument. I avoided this mistake in dissecting the other four impregnated uteri, which I had occasion to examine afterwards, and then had the villous coat entire, and the smooth chorion spread over all the serosities." He goes on to show, from Dr. Noortwyk's own account of his dissections, that "the doctor must have persisted in the error which I committed in dissecting the first impregnated uterus which I had occasion to examine, and brought off the internal cellular substance and sinuses of the womb with the ovum, in which case all the appearances would be exactly as he has described them." He distinctly describes the placenta as "*being covered on the side next to the womb with a membranous continuation of the chorion.*" To Slade, who had pretended to show the communication be-

tween the vessels of the *glacule* and *placental* in cows, he answers "that having tried the experiment variously, he had come to the very contrary conclusion, and that he could not be more certain of any thing than that there is no anastomosis or continuity of these vessels in cows."

The following passage will explain his physiological views: "Were I allowed to illustrate the communication between a mother and her child in the womb, by a gross comparison, I would say that the uterine sinuses are to a fœtus what the intestines are to an adult; the uterine blood poured into the sinuses being analogous to the recent ingesta of food and drink. The liquors sent from the umbilical arteries to be mixed with the uterine blood, resemble the bile, pancreatic juice, and other liquors separated from the mass of blood. The umbilical veins, and these on the surface of the chorion, take up the finer part of this compound mass, as the lacteal and meseraic veins do from the contents of the guts: but the grosser parts of the blood in the sinuses are carried back by the veins of the womb, as the excrements of the guts are discharged at the anus."

Whether or not any attempt was made to answer the arguments contained in Monro's essay, or how they could have been answered, I am alike ignorant, but certain it is that the opinions of Noortwyk soon afterwards found an advocate of such celebrity as raised them to a degree of importance which they would not otherwise have attained.* I allude to Haller, who about this period was rising to be one of the most eminent authorities in physiology and medicine. Haller, it is true, admits, in a letter to his pupil, Dr. Donald Munro, son of

* The Medical Essays and Observations published by a society in Edinburgh, in and about the year 1787, contain certain papers which show, in a very interesting manner, the unsettled state of professional opinion in Scotland, regarding the placenta, about that period. See in particular "Observations on the Placenta," by Dr. Thomas Stimson of St. Andrews. Some of his statements and opinions are very inaccurate, and in that respect form a strong contrast to those contained in the writings of the physiologists of the 17th century. For example, he holds that in the Ruminants the *placental* are produced on the chorion by contact with the *glacule*, and denies that in extra-uterine conceptions any placenta can exist, vol. iv. p. 98. I must scarcely remark that the existence of a placenta in extra-uterine pregnancies is a fact which cannot now be contradicted. See Turnbull's case, and many others, published of late years.

* I beg the reader to remark how analogous these appearances are to what is seen in the glands of the cow.

the aforesaid Dr. Alexander Munro, that he himself had never made any original observations on the placenta; but, notwithstanding this admission, there can be no doubt that the authority of his name would go far to sanction any opinions which he advocated. Haller, then, decidedly held that all the absorbent vessels terminate on free surfaces by *patulous mouths* (*osculis patentibus*), and that there is a mutual connection of vessels between the mother and fœtus in utero. (See *Prima Lina*, § 769 and 891). I have seen it stated, indeed, in certain recent publications, that Haller did not believe in an anastomosis between the vessels of the mother and fœtus in the placenta*; but I cannot conceive any language more express than that which he uses in support of this doctrine. He says—"Respondentibus ex utero in placenta venas arteriis exhalantibus, tum placenta arteriis ad uteri magnas venas hiantibus."—*L. c.* He does not hesitate to declare it as his opinion, that in the manner now described, by means of the placenta, a humour of a milky nature is at first transmitted to the fœtus, and ultimately blood. In proof of this doctrine that the fœtus is supplied with blood from its mother, he appeals to the well-known phenomena of menstruation and uterine hæmorrhage,—to injections "lately performed by distinguished men," whereby mercury and wax had been thrown from the uterine vessels into those of the placenta,—and to the fact that a fœtus had been known to be formed without a heart, in which case, as he argues, the whole of the blood must have been furnished by the mother.† Here, then, we find described a most extraordinary mode of communication between the vessels of the mother and the fœtus, the veins of the fœtus sucking in blood from the arteries of the mother, and the veins of the latter

sucking it back from the arteries of the fœtus! Thus were the arteries and veins supposed to be locked together in each other's embraces! No wonder that the author calls this mode of communication by the name of "*commerce*." How the arteries and veins, deriving their origin from such distant points as the hearts of the mother and fœtus, contrive to find out one another's mouths "in the dark chamber," he does not attempt to explain. The illustrious Boerhaave, in his work "*Economia Animalis*," gives a sort of equivocal assent to this doctrine, although, at the same time, it is apparent that he did not feel at all satisfied with it, for he admits that appearances are certainly in so far against it, as no mouths of vessels can be detected on the lining membrane of the uterus, nor on the uterine surface of the placenta, which he describes as being smooth, and covered by the chorion (§ 678, 679). The theory of Haller is the one which is adopted by Fleming in his *Introduction to Physiology*—a work which it is well known was long used as a textbook on the subject it treats of by the students of medicine in this country. He says—"I stick not to believe that red blood as such is brought from the mother to the fœtus, and transmitted from the fœtus to the mother, as it were, in a circle."

Such, then, was the state of established opinions about the middle of the 18th century; some, with Haller, contending for a sort of vascular connection between the mother and fœtus; and others, with Munro, still adhering to the theory of Harvey, and denying all such connection. It was not long after this time that the Hunters rose to so great celebrity that their opinions became, as it were, laws, which no one was at liberty to dispute. Now it is to be borne in mind that the Hunters acquired a mighty reputation by establishing (as was supposed) what had been often maintained and denied before—that the lymphatic vessels perform exclusively the function of absorption, and that these all terminate by open mouths on the free surfaces of membranes. This doctrine regarding the absorbents it was long considered their greatest glory to have established beyond all possibility of controversy, by injected preparations contained in their museums. In particular (as has

* *Edin. Med. and Sur. Jour.*, No 118.

† The case of the child without heart and lungs to which Haller here alludes, is no doubt the one related by Merz, *Mém. de l'Acad. des Sciences*, 1730. It is noticed by Munro in his essay referred to above. The case, however, is not at all important; for Merz himself states that this monster was twin to a perfect child, whose *fœtus umbilical* went off the small navel string of the monster, which was thus supplied with blood from its perfect brother. The injections "lately performed by distinguished men," to which he alludes, were probably those of Cowper and Drake, which Munro shows to be utterly inconclusive.

been stated by Professor Goodsir), Dr. W. Hunter, and his colleague Mr. Cruickshank, had in their collection two preparations which were considered to exhibit most distinctly the openings of the lacteals in the intestinal canal. But, as the tale is highly interesting and instructive, I shall give it in Mr. Goodsir's own words:—"Mr. Cruickshank, in treating of the orifices of the lacteals and lymphatics, states that he and Dr. Wm. Hunter observed the openings by which the lacteals communicated with the cavity of the gut in portions of the intestine of a woman who died after eating a hearty supper. The two preparations of the intestine on which these anatomists made their observations came into the possession of the College of Surgeons in Edinburgh, as part of the Collection of the late Sir Charles Bell. * * Repeated examinations satisfied me that Dr. W. Hunter and Mr. Cruickshank were quite correct in describing and figuring radiating lacteals within the villi, but that they were led into error in describing those vessels as opening on the free surface of the gut, partly by imperfect instruments and methods of observation,—partly by general prejudice of the period in favour of absorbent orifices."—(*Anatomical and Pathological Observations*, No. 2). It thus appears that Hunter's preparations, which were supposed to prove the truth of his doctrines regarding the absorbents, as far at least as regards their terminations by *open mouths*, prove nothing of the kind, and that the Hunters were led into the mistake of *fancying they saw what it is clear they did not actually see*,—"partly by imperfect instruments and methods of observation, partly by the general prejudices of the period in favour of absorbent orifice"—but also, I would add, in a very considerable measure by their inordinate ambition to raise themselves a name above all other names in the profession, and to construct on an original system, both of physiology and medicine,

—*quod nec Jovis ira neque ignis,
Nec poterit ferrum nec edax abolere vetustas.*

In such a frame of mind, and with these prejudices, the two brothers, in 1780, took up the subject of the placenta; and a most unfortunate undertaking it must have proved to both, as regards their happiness, seeing the ri-

valry engendered by the simultaneous publication of their discovery created a breach in that brotherly affection which had so long subsisted between them.

In the first place I would call attention to the remark, that the doctrines of the Hunters, regarding the absorbents, and Harvey's Theory of the Placenta, are evidently incompatible with one another, since the latter exhibits an instance of absorption through membranes, and performed without the aid of lymphatics. Now I do not mean to insinuate that this consideration led the Hunters to pawn deliberately on the scientific world a false statement of facts, to conceal the weak points of their own hypothesis, but I do not hesitate to say that I believe prejudices in favour of their own doctrines made them see the phenomena connected with the placenta through a distorted medium, and in such a light as suited their own peculiar views and prepossessions.*

I find it very difficult to convey to any reader who is not familiar with the subject, a distinct conception of the description of the placenta given by the Hunters; more especially restricted, as I necessarily am, within very narrow limits. It must be apparent to every one who is at all conversant with the literature of the foetal structures, that the Hunters mystified it in a remarkable degree by combining hypothesis with their descriptions of those "soft and gelatinous pellicles" formerly described by Malpighi, to which W. Hunter gave the very incongruous name of "*decidua*," from a mistaken idea that they consist of the inner membrane of the uterus, which he fancied to be cast off like "the slough" of a serpent. I need not say how much the perplexity has been increased by the preposterous ingenuity of their followers, so that it has now become a perfect puzzle to comprehend the *decidua vera*, *decidua reflexa*, *decidua parietina*, *decidua serotina*, &c. To me it appears that the importance of the *decidua*, in connection with the literature of embryology, has been absurdly exaggerated, and that they are merely flocculent films or pellicles, formed by the concretion of

* The classical scholar will here recollect the old adage, "*credunt quia credere cordi est*," or, as it is otherwise expressed, "*quod volunt, id credunt homines*."

a gelatinous exudation from the vessels of the uterus; for they are all evidently devoid of structure and vascularity, and have none of that firmness by which the true membranes of the organ are characterized.* And now, with regard to J. Hunter's celebrated description of the dissection of an injected uterus, contained in his "Animal Economy," suffice it to say, that he describes arteries "*about the size of a crow-quill*," passing from the surface of the uterus into the placenta, and terminating there "in a very fine spongy substance; and that the veins originating from this same spongy substance pass obliquely through the decidua, and communicate with the proper veins of the uterus." The following is his description of the appearances remarked by him on recently expelled placentæ:—"Soon after this time, Dr. Hunter and I procured several placentæ, to discover if, after delivery, the termination of the veins and the curling arteries could be observed; *they were discernible almost in every one*; and by pushing a pipe into the placenta, we could fill, not only its whole substance, but also the vessels on that surface which were attached to the uterus, with injection." The views of W. Hunter are quite similar, and from these two originals, all the descriptions of the placenta which occur in our treatises of anatomy, and works on midwifery, during the next fifty years, are, with very slight modifications, entirely borrowed. In order to place the subject in a more distinct point of view, I shall here quote the description of the placenta and the fœtal circulation, given in a Treatise on Anatomy, which was a common text-book in the schools of medicine at the time when I was engaged in my professional studies, and from which I formed my first conceptions of the structure and functional office of the organ:—"In the placenta are to be

observed, on the side next the child, vessels, forming the principal part of its substance; on the side next the mother, the ramifications of the umbilical *branches of the uterine arteries, almost of the size of crow-quills*, passing in a convoluted manner between the uterus and placenta, and terminating in the latter. Veins corresponding with these arteries, but flat, and of good size, running obliquely from the placenta to the uterus; and, in the substance of the placenta, an appearance, which has been supposed by many authors to be the common cellular tissue, and easily ruptured by injection, but which is considered by late authors as a *regular spongy substance similar to that in the body of the penis*." "The placenta receives blood from the uterus, and, according to the opinion of modern anatomists, *purifies the blood, as the lungs do in the adult*, for the nourishment of the fœtus."* "The blood is sent by the arteries of the uterus to the substance of the placenta, from which, according to the opinion of many of the ancient anatomists, it passes to the

* That the placenta is a respiratory organ, was no new doctrine; indeed, as hinted above, it is as old as Hippocrates, but still, in my opinion, it is quite untenable. Needham properly remarks that it is only by a play upon the term that the functions of the placenta can be assimilated to respiration, since it evidently is so situated as to want the requisites of a respiratory organ. That it is, to a certain extent, a depuratory organ, may be readily admitted, but so, in fact, are the vessels on the inner surface of the intestinal tube, and even the spongioses of trees, for both these excrete recrementitious matters from the organisms to which they also absorb alimentary matters. But this is evidently a very different process from respiration, the primary end of which would appear to be the preservation of the innate heat of animals. We may venture then, I think, to state it as an universal law, that no animal in the state of embryo stands in need of respiration, seeing that in viviparous animals the fœtus derives the heat from the vitals of its mother, and in the oviparous it is supplied with the same from without. It has, therefore, always appeared to me an extremely improbable hypothesis, that in incubation the allantois is for the purpose of respiration; indeed, the fact that urinary deposits are often found in the allantois, towards the end of incubation, seems to me to prove the contrary, most decidedly, and that in oviparous animals, as well as in the ruminantia and bisulca, it is rather an appendage of the urinary organs. See Wagner's Physiology, English Ed., p. 196; and Mr. Town's experiments, which are very similar to those reported to have been performed by the father of Dr. A. Munro *primus*, and appear to me to have never been fairly met. I observed, indeed, a very interesting paper on the other side of the question, in the Microscopical Journal, for Feb. 1846, by Mr. J. Dalrymple, but I cannot admit that his injections, however carefully devised and executed, fairly counterbalance Mr. Town's experiments, and the fact I have alluded to of urinary deposits being found in the allantois.

* It will be understood, I trust, that I apply this character merely to the films formed by exudations from the mother. I of course except what has latterly been called the *decidua vera*, by which is meant the lining membrane of the uterus, thickened and expanded, like all the other structures of the organ, by the stimulus of conception. I need scarcely remark what a gross misnomer *decidua vera* is when thus applied. *Decidua falsa* would be a more appropriate term: It would be most desirable that microscopical anatomists should pay some attention to logic, as much, at least, as to teach them the importance of using properly defined terms.

umbilical vein by a direct communication of branches,—or, according to that of the greater part of modern authors, by absorption. From the iliac arteries it is conveyed by the umbilical branches to the substance of the placenta, where one portion of it returns by corresponding veins to the fœtus, the rest going to the uterus in the manner it was discharged from the uterine arteries to the branches of the umbilical veins."—*Fyfe's Compendium of Anatomy*, vol. ii. pp. 295, 296, 307, 308. Edin. 1812.

From the above descriptions it would appear that, according to the Hunters and their followers, the placenta is constructed in the following way:—The great mass of it next to the fœtus is formed from the umbilical vessels, and the more external layer, next its uterine surface, from the curling arteries of the size of crow-quills and corresponding veins of great size; and its uterine and fœtal portions are connected together by means of a spongy substance, namely, the placental cells. Where the cells are situated I am not aware that any one has accurately defined, but I think it probable from the descriptions both of J. Hunter and Fyfe, as given above, that they were supposed to be much nearer the uterine than the fœtal surface of the organ.*

[To be continued.]

SURGICAL INSTRUMENTS OF THE ROMANS.

DR. QUARANTA, of Naples, is about to publish a work under the title of *Armamentarium Chirurgicum Pompeianum*, containing a full description of all the surgical instruments which have been discovered in the ruins of Herculaneum and Pompeii. It will also contain an account of the state of practical surgery among the Romans. The surgical instruments discovered up to the year 1846 amount to 284: they are chiefly in bronze. Among them is the prototype of the claw instrument for extracting teeth, known in modern times under the name of Cox's Key Instrument!

* See further Burn's *Principles of Midwifery*, 1832, p. 300. This excellent author certainly appears to understand the construction of the placenta to be as I have represented above. He distinctly describes the placenta as consisting of two portions, which can be separated from one another during the first three months, and which can at all times be injected separately,—the one from the fœtal and the other from the uterine side, the space called the placental cells being left between them.†

ON SOME POINTS CONNECTED WITH THE HISTORY, PATHOLOGY, AND TREATMENT OF DIABETES MELLITUS.

By CHARLES ELAM, M.B. Lond.

University Medical Scholar.

THERE are few diseases defined in our nosological arrangements, to which a more perfect clinical history is attached (chiefly by researches of late years), than that which forms the subject of the following remarks—none of which the diagnosis is more accurate; whilst, at the same time, there are very few, at least of those which occur with tolerable frequency, of which less is known, when considered with regard to their essential nature and pathology; or whose treatment is more empirical, and unfortunately, in the great majority of instances, only palliative, and ultimately unsuccessful.

The morbid anatomy of this affection is so vague in its indications, and those changes which are most constant, as the dilatation of the pelvis of the kidney, stand so evidently in relation of effect rather than cause, that this part of the evidence is of little value, except in a negative sense; and it is only by a careful study of the phenomena of the disease during life, that we can hope to arrive at a knowledge of its essential nature.

The primary and pathognomonic symptom of this affection is a discharge of a large quantity of urine, varying in colour, but having the constant characteristic of a high specific gravity, from the natural standard to 1060 and upwards, resulting from the presence of a variable quantity of sugar, of the same constitution as that obtained from grapes.

The general symptoms consequent upon this elimination of sugar from the system are, a more or less rapid emaciation and debility; a ravenous appetite; unquenchable thirst; dry, harsh, imperspirable state of the skin; constipated bowels, and dry stools, alternating frequently with diarrhoea; disinclination to exertion; great drowsiness and depression of spirits. A tubercular affection of the lungs often supervenes, and with all this in many cases is remarked a peculiar perversion of the moral sense with regard to

property; first evinced in reference to articles of diet, but not by any means confined to that subsequently.

Death results from two distinct causes. In some cases it is the natural termination of gradually increasing exhaustion, in others coma is induced apparently by the circulation of very impure blood in the brain, and this is preceded by a very marked diminution in the quantity of excreted sugar; rendering it more than probable that the sugar is circulating in increased quantity in the brain, and acting as a poison.

Before attempting to come to any conclusion, as to the first link in the chain of morbid actions, it will be of service to notice some variations and peculiarities in the progress of the disease, which will be found to have important practical bearings, and some of which appear to have been overlooked.

A very remarkable circumstance sometimes observed is, a complete change in the physical properties of the sugar, contained in the urine, from a thick amorphous treacle-like mass to a finely crystalline white residue, and *vice versa*. Thus, in three observations on the urine of a young man, *setat.* 19, who had been affected about six months, taken at intervals of two days each; the residue on evaporation of the first and third observation was a thick blackish mass, quite uncrystallizable: whilst the residue on the second evaporation was perfectly white, and in very fine crystals. At the same time there was a slight decrease in the specific gravity. A fall in the specific gravity to the extent of 10, or even 20, or an increase to the same amount, in the course of 24 hours, is not unusual,—indicating a great variation in the amount of sugar eliminated. The almost total disappearance of the sugar in many cases immediately previous to the fatal termination has already been noticed, but even at other times it seems suddenly to disappear, and in a few hours to reappear. It will subsequently be apparent that, even in health, sugar may occasionally make its appearance in the urine, and vanish with equal rapidity.

A very remarkable class of phenomena is connected with the ratio found to exist between the specific gravity of the urine and the quantity

evacuated. It might be supposed that when the absolute quantity of urine was diminished the specific gravity would be proportionally increased, but the reverse is the case, as shown by the following table, being the daily register of a case of four months' standing, at this time under treatment by opium and animal diet.

Day of observation.	Urine in pints.	Sp. Gr.
1.....	25	1052
2.....	23	1049
3.....	22½	1047
4.....	20	1045
5.....	20	1045
6.....	17	1038
7.....	16	1036
8.....	12	1038
9.....	17	1035
10.....	14	1034

Here the specific gravity is seen to diminish in tolerable proportion to the quantity,—an apparent exception existing on the eighth and ninth days, which is explained by the fact that the patient was suffering from profuse diarrhoea about the eighth day.

This correspondence is accounted for by considering the elimination of the sugar as the object to be attained, and the diuresis as an effect merely of this abnormal stimulus on the kidney. Then the diminution of this unnatural amount of sugar, as indicated by the lower specific gravity, will of course be attended by a corresponding diminution of the fluid parts.

Another fact, which has a still more important practical bearing than the former, is, that the quantity of the urine evacuated does not bear any distinct ratio to the quantity of the fluid ingesta. When the inclination to drink is freely indulged, the ingesta will equal, and often exceed, the fluid excretion, but neither is this latter *proportionately* increased by excessive drinking, nor, when the appetites are violently restrained, is there observed a diminution in the quantity of urine at all commensurate with that of the fluid consumed.

The following table is a register of the case of a boy about 15 years of age, kept by himself, who sometimes drank a great deal, and at others put considerable restraint upon himself. He had been under treatment for some months, and was nearly stationary in the quantity passed.

Day of month.	Pints of urine.	Pints of fluid ingested.
3	13	12
4	13	13
6	11	10
9	10	7
12	12½	11
17	12	14
19	13	11½

It is evident that on the ninth day there must have been considerable absorption, either by the lungs or skin, or both, to make up the difference. The bearing of this fact upon the treatment will be mentioned afterwards.

There are some peculiarities connected with the effect of remedies on the system during diabetes mellitus, which it will not be out of place to notice here.

Like many other diseases, this induces a tolerance of certain therapeutic agents to a considerable extent. Diaphoretics, even in large doses, produce but little of their specific effect. Some other remedies are equally inefficient; thus, in one case, a man of about 25 years of age took nearly two scruples of iodide of iron daily, for many days or even weeks successively. But the most singular departure from the usual mode of operation is found in the case of opium, which has been observed to act as a purgative after prolonged exhibition. I noticed this fact in four or five cases within a short time, where profuse diarrhoea set in after the use of opium for a week or two, and ceased when the opium was discontinued; and as this occurred repeatedly even in the same case, alternately giving and discontinuing the remedy, and was observed with tolerable uniformity in many cases, it can scarcely be viewed as a coincidence merely.

[To be continued.]

ASIATIC CHOLERA IN THE CAUCASUS.

THE French papers state that the cholera is raging with intense severity amongst the Russian army of the Caucasus. It has already carried off the General, Major Kowalewski, and Colonel Prince Orbelian. The malady has diminished in some detachments of the army and increased in others. It is added that the cholera has appeared in some of the mountain districts not under the dominion of Russia.

MEDICAL GAZETTE.

FRIDAY, AUGUST 13, 1847.

WE had occasion some time since to bring before our readers a notice of a somewhat amusing work, professing to be an esoteric exposition of the mysteries of Homœopathy.* We were at the time inclined to treat many of the statements as exaggerations; but we must now do the author the justice to say, that in one instance at least which has recently come to our knowledge, his "confessions" turn out to be a complete representation of the truth. We shall select for the text of our remarks the following extract from his work: it bears upon the homœopathic system, concerning which the public and the "regular" profession are much at issue,—namely, the power of infinitesimal doses to work the wonders ascribed to them by the disciples of Hahnemann.

"Patients," observes the writer, "who are sceptical of the truths of Homœopathy, from a love of variety, or a hundred other reasons, will consult you. As these persons are inclined to ridicule infinitesimal doses, it is *sometimes highly useful to give them powerful doses of various highly concentrated medicines, in globules similar in appearance to all the rest, but consisting of morphia, strychnine, arsenic, corrosive sublimate, and such like: a few of these mingled with your sugar and starch globules will cause effects to be felt by the sceptic which will quickly overcome his disbelief: he generally makes an excellent patient, and often a good decoy-duck. Never scruple in paralytic cases to give strychnine largely, but never allow it to be supposed that you are giving more at a dose than the one-hundred-thousandth of a grain.* This rule may be followed in other complaints with other very active drugs, such as croton oil; but this is

* *Confessions of an Homœopathist.* See vol. ii. New Series, p. 210.

one of our profoundest secrets, and must be kept so: were it known, our wonder-working powers would be reduced in the estimation of the public and the Regulars." (p. 197.)

A case has occurred in the metropolis within the last few weeks which, with one exception, bears out the truth of this "confession" to the letter: the exception being, that the unfortunate patient, who, as we shall presently show, has had a narrow escape of her life, was immediately cured of any love for homœopathy, and has felt no inclination whatever to become a "decoy-duck" for others. If the result of the revelation we are about to make, be to diminish "the wonder-working powers," or, as we should rather say, to expose the gross impostures practised under the name of *homœopathy*, it will be a great satisfaction to us. The case should be made known, more for the sake of the deluded portion of the public, than for the benefit of the profession, — all the sound-thinking members of which have long suspected knavery and imposition, although they have not been able to produce clear and decided proofs of their existence.

A lady who had been attended by a highly respectable general practitioner, recently consulted a homœopathic physician who has acquired some celebrity in the fashionable quarters of the metropolis, for his skill in treating and curing diseases by infinitesimal doses. She received from him four small white powders, with explicit directions (now lying before us), one to be taken every other night, — each powder being numbered, and the night on which it was to be taken, as well as the mode of taking it, being particularly specified, — "all dry on the tongue." No. 1 was swallowed according to order, and the patient was soon afterwards seized with great sleepiness, stupor, and other alarming symptoms indicative of the action of a powerful narcotic. These

effects were followed by diarrhœa. The patient was alarmed, and instead of looking upon the result as an indication of the beneficial working of homœopathic powders, or as a means of curing her of any latent scepticism respecting the efficacy of infinitesimal doses, she was prudent enough to return to her old medical friend, to whom she handed the remaining powders, with the directions. This gentleman, suspecting that they contained some active narcotic, caused them to be submitted to a chemical analysis. We have now the report of this analysis before us, and of it we make the following abridgment. The powders were numbered 2, 3, and 4. They were *similar in appearance*, except that No. 3 was somewhat whiter than the other two: there was nothing to indicate that they were of different composition; and as they were to be taken in the same way on alternate nights, this could not possibly be suspected.

Although there was no great dissimilarity in bulk, the powders were very unequal in weight. No. 2 weighed 3·4 grains; No. 3—1·5 grains; No. 4—2 grains.* No. 2 was found, upon analysis, to consist entirely of calomel and *morphia*, — the *morphia* forming not less than *one grain*. No. 3 contained no *morphia* or calomel, nor any mineral or other substance, but merely *sugar of milk*. No. 4 was composed of calomel and *morphia*, the *morphia* amounting to one-half grain.

We invite our readers to consider these facts. Here are three powders, two of which, Nos. 2 and 4, contained large doses of a most active poison. The third, No. 3, which weighed *less* than either of the others, con-

* The difference in weight between No. 4 and No. 3 was probably owing to a small portion of the former having been used by the practitioner who received them, in endeavouring to determine their composition.

sisting of an innocent substance—sugar, of which a person might have swallowed an ounce with perfect impunity! What quantity of morphia was contained in the powder actually taken, it is impossible to conjecture; the effects, however, sufficiently proved that it was something more than infinitesimal! Before taking this powder it appears that the patient had swallowed one which had been given to her singly by the prescriber. On the doctrine of chances this may have been sugar of milk! The shameful imposture of thus mixing in the same packet, and prescribing under precisely similar directions, an active poison, and an innocent substance, has been thus accidentally but clearly brought to light!

It is worthy of remark that the powder marked No. 2, contained a dose of morphia, which might, under certain circumstances, have destroyed the life of a person not used to the drug;* the following case, therefore, might have easily occurred. Let us suppose that a person had swallowed No. 2, and had died from its effects, and the only remaining powder was No. 3. This would have been submitted to a careful analysis, and found to be only sugar of milk. On a post-mortem examination, no morphia would have been detected in the body, and no appearance to indicate that poison had been taken. A fulness of the cerebral vessels might have been discovered, but at the inquest this would have been fairly ascribed, by the legal gentleman "who watched the case" for the unjustly accused physician,—to a sudden attack of apoplexy! It would be rendered quite clear to the jury, that sugar of milk was incapable of producing any such serious or alarming symptoms as those

described by the medical witnesses; and it could not for a moment be supposed that powders, prescribed under precisely similar circumstances, and enclosed in the same packet, with the same instructions as to taking them at equal intervals of time, should differ in composition. A "highly intelligent" jury, under the direction of a "worthy counsel," would, most probably, have returned a verdict of "died by the visitation of God!"

But admitting that the case was sent before a higher tribunal, and that the accused was tried on a charge of manslaughter, it is easy to foresee what would have been the result. A Mr. Sergeant —, or a Sir —, would, on the close of the case for the prosecution, rise to address the jury, under feelings of emotion which it would be difficult for him to describe. A gentleman of unblemished reputation,—his great success,—the envy of those who, in their own self-conceit, called themselves the "regular" profession, and the secret of this most unjust prosecution,—charged with the grave offence of manslaughter, in his efforts to rescue from the grave a lovely being, over whom an insidious and fatal disease was impending. In the whole course of his professional experience he had never met with a case supported by such slender evidence. His learned brother had felt the difficulty of his position; he had, by his own witnesses, actually proved the innocence of that worthy and persecuted individual, who now stood, as a prisoner at the bar, before them, awaiting calmly, at their hands, that sentence which would either restore him to dispense the blessings of his skill upon anxious thousands, or consign him to a prison, with utter ruin to his hitherto unsullied reputation. He (the learned counsel) would particularly impress upon their minds, that he had drawn from the scientific witnesses for the prosecution—reluc-

* Dr. Paterson has reported the case of a female, aged 19, who was killed by a dose of one grain of the muriate of morphia.—*Monthly Journal of Medical Science*, Sept. 1846, p. 191.

tantly, it was true, but still, most clearly and distinctly—the admission that the remaining powder, on analysis, was found to contain nothing but *sugar of milk*! Those scientific witnesses had candidly told them, what the jury, as men of the world and of sound common sense, must know without such information, that sugar of milk could not, by any possibility, have produced the symptoms of narcotic poisoning, under which, it was alleged, this unfortunate female had died; and it would be absurd, and in the highest degree unjust to the prisoner, to suppose that the powder swallowed by the deceased, differed, in any respect, from that which was found in the packet, and taken possession of by the police, immediately after her death. There could, indeed, be no pretence for believing that some other substance had been secretly substituted for it. His learned friend had not even ventured to make such a preposterous assertion: it would be as reasonable to suppose that any one of those eminent scientific gentlemen who had just appeared in the witness-box had prescribed at the same time, — with similar directions, and without any warning or intimation to a patient, two draughts, the one containing prussic acid, and the other distilled water! He would at once dismiss such an idea, as an outrage upon common sense. Then, with regard to the cause of death, his learned friend had actually shown nothing. He had failed to prove that a poison, or any substance of a noxious nature, had been administered to the deceased. The medical gentlemen had stated, in cross-examination, that they had found no poison in the body; and that the appearances in the brain were such as were met with in apoplexy, and many varieties of natural disease. Had those gentlemen not been misled by a feeling of prejudice against the highly respectable practitioner on whose behalf he was now

addressing them, it was certain, in his mind, that they would have at once found a sufficient cause of death in a sudden attack of apoplexy, to which persons at all ages, as the Registrars returns clearly proved, are subject. It was beyond all doubt one of those mysterious cases of sudden death which no one could foresee, and against which the resources of science and art are of no avail, &c.

Who can doubt that, under these circumstances, there would have been an immediate acquittal? The prisoner would have received in Court the hearty congratulations of his friends, — the members of the “regular” profession would have privately retired in utter dismay, — homoeopathy would have gained another triumph by this instance of gross persecution on the part of the Faculty, — a public dinner would have been given to the persecuted physician, at which some noble lord would have presided, — and the patients who had not up to that time swallowed overdoses of morphia in globules or powders, would have immediately subscribed for a handsome service of plate to be presented to this intended victim of professional malice, as a testimonial of their gratitude, and a proof of their confidence in his knowledge and skill.

In considering the full consequences of the facts of the case which we have here brought forward, we think our readers will agree with us that these events, supposed as possible, might have easily occurred, and the public have been still more completely deceived by the result of the trial.

We are desirous, however, to pass from the speculative to the real, and to make this case, the facts of which we have from the most authentic source, serve as a serious warning to the public. The doctrine of infinitesimal doses is proved by the result to be an imposture of the grossest kind. If morphia be prescribed in grain and

half-grain doses alternately with sugar of milk, what is to prevent the employment of those formidable poisons aconitina, strychnia, and conia? The tenth of a grain of the former will, it is said, destroy the life of an adult; and this may be easily mixed up with a white powder of small bulk. We know nothing that so closely approaches this system of prescribing, as the practices of the slow poisoners of the middle ages. They predicted the death of their intended victim at a certain period, and inert substances were given until the time arrived. A small but fatal dose then realised the prediction!

It is no longer difficult, with these facts before us, to explain the contradictory statements which have been made respecting the potency and effects of homœopathic medicines. A respectable practitioner of some experience has lately announced to the public, that he swallowed a bottleful of homœopathic globules, and they had no effect whatever upon him! These globules must have corresponded to powder No. 3. Had he by any accident swallowed the contents of the bottle from which No. 2 was taken, we suspect that his arguments respecting the inefficacy of the medicines prescribed by homœopaths, would have been brought to a very summary termination! We consider that one clearly developed case of this kind extinguishes for ever the doctrine of infinitesimal doses:—*Falsus in uno—falsus in omnibus*. No man who has once been convicted of a trick of this description can ever again be trusted; and when he stands forth prominently as the advocate of a particular system of treating disease, and professes to base his success upon the exclusive adoption of this system, while it is proved that he is in secret pursuing a totally different course,—it shows that

the whole fabric is unsound, and that to the public it is worse than “a mockery, a delusion, and a snare.” It not only places the lives of the deluded patients in jeopardy, but, as we have shown by a supposititious, although a possible case, it can even set the criminal law at defiance; and thus out of evil extract good! A homœopathist may, if he please, prescribe morphia: to this no one can object; but that he should prescribe this powerful alkaloid in doses from which regular practitioners would shrink as likely to be dangerous, if not fatal to their patients,—that he should at the same time pretend to employ only billionths and trillionths of a grain,—and, the better to keep up the deception, prescribe an inert substance alternately with this active drug, is a course which must be condemned as in the highest degree dishonest. Strip him of his infinitesimal doses, and he becomes no more than an ordinary practitioner; his exclusive claim on the public is dependent on the allegation that he pursues a course which is here proved to have been secretly violated, even to a most dangerous extent. We should therefore say of his patients:—*infortunati nimis sua si mala nesciunt!*

We might, if we pleased, strengthen our argument by adducing the well-known fact that, in the treatment of diseases under which they themselves labour, homœopaths reject their own system of prescribing. They consult “regular” practitioners,—men who do not profess openly one thing for mercenary motives and practise in secret another: and what better proof than this, can be adduced of their want of confidence in their own doctrines? We have, however, already dwelt long enough upon the subject; and it will be a satisfaction to us to know, that if arguments have failed to convince the public of the absurdity

of the system of homœopathy, this revelation of facts may have some influence in opening their eyes to its hypocrisy and danger.

Reviews.

Gray's Supplement to the Pharmacopœia; being a concise but comprehensive Dispensatory and Manual of Facts and Formula, for the Chemist, Druggist, and Medical Practitioner. Entirely re-written, re-arranged, and considerably enlarged, by THEOPHILUS REDWOOD, Professor of Pharmacy to the Pharmaceutical Society of Great Britain. 8vo. pp. 1118. London: Longman and Co.; Simpkin and Co.; Sherwood and Co.; John Churchill; Henry Bohn; and Henry Renshaw. 1847.

THE merits of the earlier editions of Gray's Supplement must be perfectly well known to the generality of our readers. The editor of this recently published volume has evidently bestowed an extraordinary amount of labour and research in order to reconcile it with the present state of knowledge. He has omitted much of the matter contained in previous editions, supplying its place by many additional facts, and has, as he states, entirely re-written and re-arranged the work.

In its present form the "Supplement" embodies an enormous mass of useful and curious information. The following abstract of the contents will best convey an idea of its scope and intention.

"Brief chronological history of Pharmacopœias and Dispensatories. Historical and descriptive account of Weights and Measures, with Tables for facilitating calculations. Descriptions of the methods of taking Specific Gravities, and of the Instruments used for that purpose, with tables of hydrometrical equivalents; and of the relation between the specific gravities and strengths of acid and alkaline solutions, &c. Relation between different thermometrical equivalents; effects of heat; formulæ for freeing mixtures, &c. Chemical elements, their symbols and equivalents. Table of solubility of salts. Explanation of terms used in prescriptions. The Pharmaceutical Calendar, containing a notice of plants to

be collected, and operations to be performed at particular periods of the year. Animals yielding products employed in medicine, domestic economy, and the arts. Preservation of animal substances. Vegetables yielding products employed in medicine, domestic economy, and the arts. Collection and preservation of plants. Animal, vegetable, and mineral products, and formulæ for the preparation of compounds employed in medicine, domestic economy, and the arts."

This last portion of the work occupies upwards of four hundred pages, and embraces an immense mass of formulæ giving the various preparations as ordered in the London, Edinburgh, Dublin, and United States Pharmacopœias; and containing the composition of the principal natural and artificial mineral waters; of the various baths employed in the treatment of disease; a large collection of formulæ of veterinary medicines; together with a great variety of receipts, more especially useful to the perfumer, the druggist, and the manufacturer of works of art; indeed, so large an amount of miscellaneous information has been included in this portion of the work that we almost expected to find that the principal part of the "formulæ for the preparation of compounds employed in domestic economy" would have been devoted to the sublime art of the cordon bleu; but we perceive that in this department the editor has not done more than describe the preparation of Isinglass Jelly, Ginger Beer, and the like.

The only fault that we have discovered in the work is the introduction of much superfluous matter, merely illustrative of ridiculous and exploded opinions. For example, the following extracts contain the only pharmaceutical facts comprised in two entire pages; not one of these facts can be regarded as of the slightest value to the compounder or prescriber of drugs in the present day; and, however curious they may be considered, they ought not to be allowed to increase the bulk of a really practical work.

"VESPERTILIO. *Use.*—The flesh of the animal is said to have been used by Galen against gout. Avicenna employed an oil obtained from it in the same disease.

"ERINACEUS EUROPEUS. *Use.*—The *adeps* is mentioned as a simple in some of the old Pharmacopœias. This was considered useful in diarrhoea.

"TALPA EUROPEA. *Use.*—The ex-

crements of the mule, mixed with honey, were supposed useful in scrofulous ulcers. The earth cast up with the head 'helps wens and imposthumes.' 'The ashes of a mole taken inwardly with beer or wine, help running gout.'

"**URSUS AMERICANUS.** *Use.*—The skin of the black bear was formerly sold at from twenty to forty guineas; it now hardly fetches more than so many shillings. The soft fat obtained from different species of the bear has long been celebrated as an application for promoting the growth and preservation of the human hair.

"**URSUS ARCTOR.** *Use.*—To the Kamoshkians this bear seems to have given the necessities and even the comforts of life. The skin forms their beds and coverlets, bonnets and gloves. The flesh and fat are dainties; of the intestines they make covers for their faces, to protect them from the glare of the sun in Spring, and use them for glass over their windows."

With the exception of a very great number of these useless details, which really ought not to be allowed to increase the bulk of the next edition, the contents of this work are of very considerable importance and value. It may frequently be referred to with advantage not only by the chemist and dispenser, but also by the higher classes of the medical profession.

Traité Pratique et Historique de la Lithotritie. Par Dr. CIVIALE. Paris: Baillière. 1847.

Practical and Historical Treatise on Lithotrity.

THE work before us is one of these cumbersome and wordy productions on medical subjects which, at the present day, so frequently issue from the French scientific press, and which are so strikingly and unfavourably contrasted with the condensed, matter-of-fact, and portable style characteristic of English medical works. The useful matter which such works contain might, as a general rule, be with advantage compressed into one-quarter of the space usually occupied by them; and this system of condensation would be of far greater service in propagating the opinions of the writers, than the present prolix and tedious length to which they seem to delight in extending their essays.

In this treatise of M. Civiale, there is apparently much valuable informa-

tion, though the mode in which this information is communicated is open to the objection of unnecessary elongation to which we have just alluded. The first half of the volume contains much useful and practical matter in reference to the most approved kind of instrument to be employed in the operation of lithotrity, furnishes the various details necessary to be observed in conducting the operation, and offers some valuable suggestions in regard to the treatment to be adopted both previous and subsequently to the operation. In the opinion of the author, and it appears to be a most reasonable one, the lithotrite cannot be too simple in construction; for, however effective and superior the more elaborate and complicated instruments may appear, yet they only serve to embarrass the practitioner in the use of them, and but too frequently increase the difficulties and dangers of the operation. This caution will apply especially to young practitioners, who are but too apt to be seduced by the ingenuity in construction displayed by the highly-finished lithotrites of the present day; but, in the right use of which, much additional skill and caution are required beyond that rendered necessary by the delicacy of the operation, even with an instrument of the most simple construction. The best portion of this half of the work is occupied with an account of the various complications which may ensue after the performance of lithotrity. Considerable space is also occupied with an account of those cases in which fragments of the crushed calculi become impacted in the different parts of the canal of the urethra; and with suggestions as to the best mode of removing these sources of obstruction and irritation, and of remedying the evils consequent on their arrest. The remaining half of the work is devoted to a review of the history of lithotrity from the period of its first employment to the present time. The work is accompanied by some good lithographic sketches descriptive of the various and most approved kinds of lithotrites hitherto invented. With the objection above stated, this treatise of M. Civiale may be considered as a useful addition to surgical literature.

Proceedings of Societies.

MANCHESTER PATHOLOGICAL SOCIETY.

Palpitation of the Heart, in sympathy with Cancer of the Stomach.

Dr. WATTS exhibited a remarkable example of cancerous perforation of the stomach; the cancer having been attended by no symptom except palpitation of the heart, until fatal peritonitis supervened.

The cancer, which was of the fungoid kind, occupied the fundus of the stomach, over a space nearly as large as the open hand; and, in the centre of the diseased mass, the coats of the organ were completely consumed by ulceration, leaving an opening about two inches long by an inch and a half broad. Externally the cancerous portion of the stomach had contracted intimate adhesions to the spleen and neighbouring membranous parts, by which means the destruction of substance had been allowed to proceed to so great an extent, without the ordinary consequences of rupture. Amidst the false membrane forming the adhesion, a quantity of thick pus presented itself; and it appeared as if the extensive suppuration in this part had been the occasion of secondary inflammation of the peritoneum, which membrane was generally bloodshot, and contained within its cavity much turbid serum mixed with flakes of lymph; no other organ was diseased, and the heart was most perfect in every respect.

The patient, aged 72 years, had always enjoyed singularly good health, till within a few months of his decease: when he came under treatment, he had so much more the appearance of ordinary men at 50 years, that Dr. Watts, at the time, expressed surprise at his hale and vigorous aspect; there was not the slightest mark of cachexy, but, on the contrary, every thing to contraindicate it. He complained merely of palpitation of the heart, accompanied, in some degree, with shortness of breath, and occasionally with transient stitches of pain in the thoracic parietes; but these painful sensations seldom occurred, and were so trifling that his attention was not directed to them unless by minute inquiry. The percussion sound over the heart region, and the sounds of the heart itself, were perfectly correct, as also devoid of any morbid accompaniment; yet the palpitation was considerable. No derangement of the stomach, no symptom of indigestion, could be detected; the appetite was good, and there was neither vomiting, eructation, nor uneasiness, after meals, and the body

appeared well nourished; his spirits were not depressed; the bowels acted regularly, and the flow of urine was as ordinary.

In the absence of the signs of organic disease, the symptoms were regarded as indicating simply irritable heart; and the irritability was conceived to result either from causes acting within the organ itself, or by sympathy with remote viscera or parts—such as the stomach, &c. The treatment was varied and directed accordingly, but in every instance signally failed to stop the palpitation. The indisposition did not apparently increase however, nor was there any visible loss of flesh; and the man felt no further uneasiness, until peritonitis suddenly supervened with considerable effusion into the peritoneum, which ended fatally in the course of a few days.

Dr. Watts regarded this case as one exemplifying a group, in which cancer proceeds after the fashion of a local disease, without the vital perfection of the rest of the economy partaking at all visibly in the morbid state, and as thus contrasting in a remarkable manner with other groups of cases, in which a general affection of the system precedes or attends the local manifestation of the cancerous malady in the solid structures.

It further appeared to him as illustrating a point of practical interest—namely, that palpitation of the heart may sometimes be the first and the sole symptom attending upon disease of a remote organ about to have a fatal termination. Although there is nothing in the history of this case clearly showing when palpitation should be considered as positively of such ill omen, yet it leaves this lesson of caution in prognosis, that, when palpitation of the heart is not reasonably accounted for by some manifest disease, or by some evident derangement of the economy, or by some congenital or constitutional peculiarity, particularly also if it be not susceptible of relief through appropriate treatment, it should be allowed all the weight properly attached to a doubtful symptom, and be regarded as possibly the harbinger of serious latent disease, or even of the existence of a fatal malady.

He ventured but one suggestion respecting the possible origin of the derangement of the heart's action in this instance; to wit, since palpitation is not a constant symptom of gastric cancer, could it have been occasioned here by some of the sympathetic ganglia in the epigastrium suffering violence from the adhesions binding the stomach to the neighbouring parts?

Carcinoma of the Neck of the Uterus.

Dr. RENAUD presented the uterus of a woman, 65 years of age, who had died from ulceration of the bowels. The os uteri was

cream-coloured, somewhat flattened, and a very little expanded. A small and vascular polypoid-looking vesicle protruded from the posterior labium, and two smaller sessile vesicles appeared on the upper labium, partly imbedded in the uterine substance. These were the only evidences of carcinoma externally visible. When the neck of the uterus was slit up, other small vesicles came in sight, of the size of tares, and filled with a transparent and straw-coloured fluid. The cervix uteri was a little elongated, and, for more than once inch of its length, on the inner aspect, and to the extent of two lines in depth, it was in a state of cancerous induration, and in this indurated substance were the vesicles above mentioned.

The sister of this woman, yet living, is the subject of advanced uterine cancer, and is 52 years of age. A second sister is ascertained to have died in a rural district some three years ago, at an advanced age, with all the symptoms of uterine disease. No tendency to the same can be traced to the mother, who appears to have been a strong and healthy woman.

The symptoms in the subject of the present case, though not very marked, were yet sufficiently ominous to lead to a suspicion of commencing disease in the uterus; and it was partly for this reason, and partly because the cancer-matter had formed in a circle around the mucous membrane of the neck of the uterus, and was so advancing towards the body of the organ without entirely altering the character of the os, that the morbid specimen was brought before the notice of the Society. It was, moreover, valuable for those who have confidence in the prophylactic treatment of cancerous diseases, as the vesicles on the cervix uteri would doubtless have been discovered through the speculum, had they been sought; and so the suspicion of malignant disease being really present, might have been strengthened.

Fibrous Tumor within the Posterior Labium of the Uterus.—Placenta Prævia.

Mr. Farr presented a uterus, within the posterior labium of which, a fibrous tumor, about the size of an egg, was situated; the placenta having been attached over the os.

The woman—a hawker, in very destitute circumstances, aged 40 years—had previously borne nine children. She was greatly emaciated, and, when first seen, a slight hæmorrhage had already occurred, which became profuse when the os uteri began to dilate.

The presence of the above-named tumor posteriorly, and in front of it the placenta, which completely occupied the os, rendered the nature of the presentation somewhat difficult to determine.

The delivery was effected by first sepa-

rating the placenta—an operation that required an hour for its completion, though attended with little further loss of blood. All hæmorrhage ceased after the complete detachment of the placenta, and a still-born child was delivered with the vectis. Notwithstanding the uterus contracted well, and expelled all coagula, still, owing to the extreme state of prostration, which the most powerful stimulants failed to relieve, she died six hours after delivery.

The rigidity of the os uteri depending on the foreign body in the posterior lip, combined with the enfeebled state of the patient, account for the difficulty experienced in dilating the os for the passage of the placenta.

BRITISH ASSOCIATION—PHYSIOLOGICAL SECTION.

Abstract of a Paper, by Dr. Fowler, F.R.S. on the Blind and Deaf and Dumb, communicated to the British Association at Oxford.

THE author commences by referring to the cases (six in number) of persons blind, deaf, and dumb from infancy, which he has seen, and particularly instances two young girls whom he saw last autumn, in an asylum for the deaf and blind, at Bath, as remarkable for the great progress they had made in instruction.

Judging from the mode in which persons blind and deaf, seek to inform themselves of external objects by the sense of touch, the author thinks that that sense is not limited to the ends of the fingers and to the mouth, but is extended to every voluntary adjusting muscle in the body, and, indeed, that the perceptive sensations by touch are to be found rather in the muscular sense than in any specific nerve appropriated exclusively to that function.

The most marked difference between persons both blind and deaf, and persons who possess both vision and hearing, consists, the author thinks, in this, that the latter pass rapidly from the sensational signs of objects to the objects themselves which excited these sensational signs, whereas to the blind and deaf these signs are more abiding objects of the mind's attention.

The perceptive efficiency of the other senses besides touch, the author considers to be, in a great measure, dependent on the adjustments effected through the medium of the muscular sense, for if we would have distinct perceptions, we must look, listen, &c. with adjusted eyes, ears, &c. But besides this, the author observes, that the mere adjustment of the eyes and ears, although these organs have lost their special sensations, aids the persons labouring under such

deprivations to interpret the communications addressed to them by the touch; and this, he thinks, is the explanation of the fact observed by all instructors of the deaf or the blind, viz. that their task is much facilitated if light and sound are remembered to have been perceived, or can still make impressions, however faint and indistinct; for these impressions excite proportionate adjustments.

What has now been stated appears to the author to solve the problem how some persons newly couched recognise by the eye objects long known by the touch, and why others do not. For when any two of our senses have been impressed by the same object at one and the same time, the sensations reciprocally recal each other.

It is not possible to have instinctive information from any one sense till its impressions have been interpreted by simultaneous impressions from at least one of the others. When all the senses concur in their testimony that they are impressed and excited by one and the same object, we have then, the author thinks, the evidence, and probably the only evidence, our nature affords, of its external identity, for he is unaware of any fact to prove that the mind is perceptive of any object external to our sensations in some organ of sense. These sensations are a language; and the internal and innate ideas, by which many of them are interpreted, are our appetites.

Hospital and Infirmary Reports.

GUY'S HOSPITAL.

Case in which a foreign body became lodged in the trachea—value of stethoscopic diagnosis—its removal by operation and inversion.

H. W—, set. 13, was admitted into Guy's Hospital on Friday morning, at 2 A.M., 30th of July, 1847, with the following history:—On Thursday, the 29th of July, he was running a race with another boy, and had placed two pebbles in his mouth for the purpose of keeping it moist (a common custom on such occasions); and, while urging his speed to the utmost, on taking a full inspiration, one of the pebbles slipped from his mouth, and it seems passed into the larynx down into the trachea, as he was immediately seized with a fit of coughing, and some dyspnoea, which, however, soon subsided; but the boy immediately expressed his conviction that the pebble was in his "windpipe," as in the act of coughing he could distinctly feel it moving up and down

the passage; but, at the same time, said that it never passed above a point to which he directed attention (the lower edge of the cricoid cartilage), which would account for the absence of the violent paroxysms that attend the presence of a foreign body in the glottis.

Mr. Pritchard, of Foot's Cray, was sent for, and immediately concluded, from the history and symptoms, that the boy was correct in his suspicions that a foreign substance was in the trachea; and therefore proceeded to place him with his head downwards, in which position he remained for some time, but without the desired object being obtained. This experiment was three times unsuccessfully repeated, producing each time violent coughing and difficulty of breathing; and ecchymosis of the conjunctivæ resulted from his forcible straining.

During the whole period of this ordeal, the boy said that he could feel the pebble move up and down in his windpipe. Mr. Pritchard, concluding from the circumstances of the case, from the lad's clearly-expressed feelings, and from the effects of inversion, that the stone was in the trachea, sent him at once to Guy's Hospital, where he was placed under the care of Mr. Bransby Cooper.

On his admission, the patient was free from cough or dyspnoea, his respirations were 20 in a minute, and he slept composedly in the usual position, but still stating his conviction that the stone was in the windpipe, and indicated its position to be about an inch above the sternum.

Friday, 2 P.M.—At this time he was first seen by Mr. Bransby Cooper, who, by auricular exploration, could not obtain sufficient evidence to convince him that any foreign body was still in the trachea; and argued the probability of the abnormal sounds being produced by the substance having irritated the glottis, or that, if actually admitted into the windpipe, it might have been expelled. Mr. Cooper requested Dr. Hughes to examine the patient, who found roughened tracheal breathing, with wheezing on the right side, and to a less degree on the left, but acknowledged the physical signs were unsatisfactory as to the positive proof of a foreign body being still in the trachea, probably in consequence of the general irritation of the trachea and larger bronchial tubes.

On consultation, it was determined not to interfere at present, but to wait for more certain indications of the actual presence of the foreign body, to keep the patient perfectly quiet, and to have him constantly watched.

In the evening, it was observed by Mr. Hilton that the left lung was nearly inactive,

scarcely any murmur being audible. The breathing, however, was not attended with any distress.

31st.—Passed a comfortable night in a sitting posture, with occasional cough, but without any violent dyspnoea. The left lung remains in the same condition; but, in the course of the day, after a slight fit of coughing, the respiration became quite audible in it.

On Sunday, August 1st, he remained much in the same state.

On Monday 2d, he was examined by Dr. Addison, who found diminished supply of air to the left lung; but as the boy had undergone much examination, he agreed with Mr. Cooper, as he was not suffering from urgent symptoms, that he should be kept perfectly quiet until the next day, when a more complete exploration might be made, and the propriety of an operation determined on.

3d.—Dr. Addison examined him to-day. Breathing had returned completely in the left lung, and was puerile there, but at the apex of the right lung it was more full, and accompanied with a slight roughness. This was the state of the breathing found both at the anterior and posterior aspects of the chest. In all the lower part of the right lung the breathing was pure and loud. The percussion over the apex of the right lung was less clear than on the left side. When the patient coughed a movement was heard and felt as of a foreign body impelled by the air at each operation.

Dr. Todd, who happened to visit the hospital to-day, examined the patient with Dr. Addison, and concurred with him, and indeed with Dr. Barlow and Dr. Hughes, in the opinion that from the present signs and the previous history of the case, no doubt could now exist of the presence of a foreign body in the upper branch of the right bronchus that impeded the passage of air into the upper lobe of the lung. The shifting of the impediment from the left to the right side, as first noticed by Mr. Hilton, was much in favour of this opinion. A consultation was now held, and it was resolved that the operation of tracheotomy should immediately be performed, in order to allow of the inversion of the patient with comparative safety.

The operation was performed in the usual way by Mr. Bransby Cooper: a free opening was made into the trachea, and four of its rings divided by a bistoury.

During the operation, both before and after the opening had been made in the trachea, the patient coughed violently, and stated that he felt the pebble move, but he thought it was expelled through the opening. A probe was passed into the trachea with a view to feel the pebble, but without any other effect

than that of making the patient cough violently. He was now inverted, and struck forcibly on the back, when he said he felt the stone move above the wound in the trachea, and while in this position, during the act of inspiration, the pebble fell through the wound made in the trachea into Mr. Hilton's hand.



The outline of the pebble will show its size and form; its thickness may be about four lines.

Since the operation the boy has been free from any constitutional disturbance; he breathes freely, no air passes through the wound, and he may now be considered quite convalescent.

Medical Intelligence.

FORMATION OF A MEDICO-ETHICAL ASSOCIATION AT MANCHESTER.

Medical Ethics.—In consequence of a paper on Medical Ethics, read by Mr. Allen, of Manchester, before the Medical Society of that town, another society is in course of organization to carry out the objects contemplated in Mr. Allen's paper. At a meeting of medical men on the 2d of August, the following resolutions were unanimously adopted. Dr. Radford in the chair. It was proposed by Thomas Dorrington, Esq., and seconded by Dr. Aikenshead:—"That this meeting considers it desirable to form a society to be called the 'Manchester Medico-Ethical Association,' the objects of which shall be to support the respectability of the medical profession, and promote good feeling among its members, by framing a code of etiquette, and by appointing a governing body to enforce the same, arbitrate upon disputed points, and adopt such measures as appear best calculated to effect the above objects."

Proposed by S. Crompton, Esq., and seconded by D. Noble, Esq.:—"That the following gentlemen be appointed a Provisional Committee for the purpose of framing laws and regulations for the government of the society, and suggesting a code of etiquette for its adoption, viz., Dr. J. L. Bardale, Dr. Radford, Dr. Brown, W. J. Wilson, Esq., D. Noble, Esq., S. Crompton, Esq., Thomas Dorrington, Esq., Thomas Nursaw, Esq., Thomas Mellor, Dr. Aikenshead, R. Allen, Esq."

Proposed by Thomas Nursaw, Esq., and seconded by D. Lynch, Esq.:—"That the Provisional Committee shall at its discretion convene a meeting by advertisement of the members of the profession resident in Manchester and its neighbourhood, for the pur-

pose of receiving the result of their labours, constituting the association, and electing the officers thereof."

PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION.

THE fifteenth anniversary meeting of this excellent association was held at Derby, on the 4th and 5th inst. It was attended by a large number of highly respectable practitioners from all parts of the country. The Report of the Council noticed the continued prosperity and steady progress of the association. The number of members entered on the books amounted to 1858, a clear proof of the large amount of support which it receives. The losses which the association has sustained by the death or withdrawal of members, are more than compensated by those who annually join its ranks. It already includes a majority of the respectable class of provincial medical practitioners.

FEEs TO MEDICAL WITNESSES AT INQUESTS AND TRIALS.

We extract the following passage from a non-medical journal. We are glad to have the advocacy of the Provincial press in a matter which closely concerns the interests of the medical profession:—

"A medical gentleman, of Newcastle,—Dr. Glover,—was examined as a witness. He had made a nice and laborious analysis, absorbing considerable time, and demanding the exercise of great skill. His testimony was of the first importance to the public. It is to the interest of the public that such witnesses should be adequately remunerated. Yet the law requires them with a miser's hand. Dr. Glover said as much to the judge. He put it to his lordship whether he ought not to be more liberally rewarded for his services; and named a not immoderate sum as the fee to which he considered himself entitled. It is to the honour of Mr. Justice Wightman, but far from honourable to our laws, that he admitted the justice of the claim, and said he would have awarded even more than was asked, but he had not the power to add one farthing to the ordinary pittance.

"The other matter to which we wish to draw attention, is the false economy which rejects the services of medical men at coroners' inquests, and degrades those inquiries into idle farces. We have often said—but it cannot too often be repeated—that there are many inquests which it is absurd to hold if no post-mortem examination be made. In such cases as those to which we refer, it is impossible to ascertain the cause of death unless the body be opened by a medical man. Yet Mr. Coroner holds his court, and twelve men, in the absence of any conclusive evidence, pronounce an unhesitating

verdict, which farther and more searching inquiry not unfrequently shows to be false. In the case which suggests these observations, a man was committed to take his trial for manslaughter, and appeared before the judge for that purpose; but the cause of death could not be shown; no post-mortem examination had been made; and the prisoner was dismissed from the bar; his lordship bestowing a very proper rebuke on the coroners who decline the aid of medical men, and the magistrates who oblige them their fees. The admonition was much needed; and we trust that it may have due weight in the proper quarters."—*Gateshead Observer*.

THE CRIME OF SECRET POISONING.

THERE have been few cases in the annals of modern crime of more terrible importance to society than that of Mary Ann Milnes, tried at the recent assizes for the county of Lincoln, before Mr. Baron Rolfe. The unhappy culprit, it will be remembered, had administered poison in succession to her father-in-law, her mother-in-law, her sister-in-law, and her niece. For a while the murderess was triumphant. She had obtained the control over a secret and powerful agent. It was in her pleasure to spare life or inflict death. The disagreements which in another household would simply have furnished the subject of a domestic broil, were in her opinion ample pretext for inflicting a terrible death upon those who were so incautious as to give cause of offence to her sullen and suspicious temper. According to her own confession, made to the Rev. Mr. Ritchie, the chaplain of the gaol, the reason for making away with her brother's wife was simply some paltry domestic bickering between the husband and wife, in which she herself had been mixed up. For this cause it was she dragged a cake with arsenic, and offered it with simulated kindness to the woman she had marked for death. But her revenge to be complete must be more sweeping still. The infant child of the woman she had just murdered, must be consigned to the same grave. There was no occasion in this instance for much manoeuvring or dexterity. A pinch of arsenic dropped into the child's cup, and all was over. There must be some horrible fascination in the nature of these secret crimes against life, which removes them from the common category of murder. In other instances, in the case of those who have destroyed life by open violence, you find them pursued by the images of their victims from place to place. This misery is greater than they can bear; they wander, conscience-stricken, round the world; and, even if undetected by the agency of others, they are often to be found entering the courts of justice as self-accusers, and demanding, as a

relief, to expiate their crimes upon the scaffold. Not so in the case of poisoning. One crime is the prolific parent of another. Almost invariably it will be seen that the criminal who has once engaged herself—it is a woman's crime—in so fatal a career, will have sacrificed her friends and relatives by twos and threes, until the suspicion of those about her ripens into certainty, and she is hurried off before the tribunals for judgment.

Be this as it may, it would seem that the father and mother of Mary Ann Milner's husband were marked out as the next victims. They did not treat her well, she said, and this ill-treatment she explained to mean that they came to her house on all occasions as though it was their own. They took and did what they liked. *They paid no regard to her*,—that was the sum of their offence. She determined, as she says, to rid herself of the father; the death of the mother she imputes to accident, and not to her own intention. A little more of her poison was mixed up with a pudding, which was by her deliberately set before the old man, and of which he partook. His wife, as Mary Ann Milner told the clergyman, must have eaten by accident a portion of the poisoned dish *that had been put away*. We attach but little credit to her statement; for it is a strange feature in the idiosyncrasy of criminals of the class to which Mary Ann Milner belongs, that they will make at their dying hour some such reservation as this, and endeavour to cheat themselves and others into the belief that they were not wholly guilty, and are therefore entitled to a certain amount of commiseration.

Even if the case were as she represents it, for what purpose was the poisoned dish *put away*? Conceive the horrors of that cottage on Barnetby-le-Wold, where the means of death were scattered round the house in every cup, on every dish. The case even so appears worse, for the wretched murderers must have well known what the consequences would be of incautiously leaving here and there the instruments of her revenge.—*Times*.

. We regret that our contemporary does not come to some practical conclusion from the remarks here made on the subject of secret poisoning. If a "pinch of arsenic" were not so easily obtained, it would not be so easily *dropped into the cups of children or adults*.

Our contemporary justly observes, in strong language, "Conceive the horrors of that cottage on Barnetby-le-Wold, where the means of death were scattered round the house in every cup, on every dish!" and we

would add as a corollary,—Conceive the apathy and indifference of that government which while it pretends to protect the lives of citizens by sanitary laws, allows them to be cut off by putting no check on the universal diffusion of a secret and insidious means of murder, against which no foresight can guard! When women and even children can readily procure at any time and at any village-grocer's shop, as much arsenic for *one penny* as will suffice to destroy the lives of *seventy* persons, there is nothing to surprise us in the fact that "pinches" of this poison should be "dropped into cups," or that we should occasionally have such a display of horrors as the evidence on the recent trial has proved to have occurred in the lone cottage on Barnetby-le-Wold.

UNIVERSITY OF EDINBURGH.

At the annual graduation of Doctors in Medicine, on Monday, the 2d inst., the following gentlemen from King's College, London, were admitted to the degree:—Harry Gardner, Robert Gething, Joseph S. Lavies, William Paley, Philip S. Warren.

APOTHECARIES' HALL.

NAMES of gentlemen who passed their examination and received certificates to practise, July 29.—James Herbert Budd, Guildford—Henry Bate, Truro, Cornwall—William Brook—Charles Maxwell—Hugh Hastings, Stokenchurch—Edward M'Donnell, Culterton.

ROYAL COLLEGE OF SURGEONS.

GENTLEMEN admitted members, Aug. 6.—A. Jubb—J. Ralph—W. Thompson—W. D. Wilkes—R. E. West—J. Ingman—J. Willan—J. C. Nicholls—J. M. C. Blizard—D. De L. Ryan—J. F. Knipe.
August 9.—H. J. W. Welch—W. A. Duncan—C. G. Brown—C. Thompson—G. Hather—R. C. Scott—D. W. Williams—T. P. Healop—S. J. A. Salter—W. W. Edwards.

The following gentlemen having undergone the necessary examinations by the Court of Examiners, were, on the 12th instant, admitted by the Council to the Fellowship of the College, viz.—R. Woollaston, Conduit Street West, Hyde Park; W. H. Smith, Fonthill Place, Clapham Road; J. Williams, Dalston Terrace, Dalston; B. W. Holt, Abingdon Street, Westminster, Assistant-Surgeon to the Westminster Hospital; A. Poland, Cloak Lane, City; W. Fisher, Kendal; and A. A. W. Johnson, Suffolk Place, Pall Mall East.

OBITUARY.

DR. ANDREW COMBE.

It is with regret that we have to announce the death of Dr. Andrew Combe, which took place at Edinburgh, on the 9th inst. Dr. Combe had for many years laboured under chronic disease of the lungs, and it is this which has at length proved fatal to him. He was an excellent man, highly and deservedly respected by all who knew him. He was well known to the profession as the brother of Mr. George Combe, the phrenologist; and he was the author of numerous works on popular physiology and hygiene which have had a large circulation.

W. P. FOSTER, ESQ.

On the 26th ult., after a few hours' illness, William Penn Foster, Esq., surgeon, of Church Street, Stoke Newington, aged 44.

JOSEPH KEARSLEY, ESQ.

On the 9th inst., at Bath, Joseph Kearsley, M.D., formerly Deputy-Inspector of the Ordnance Medical Department, aged 82.

HENRY BUNN, ESQ.

At Birmingham, from fever, Henry Bunn, Esq., one of the district surgeons. It is stated in a contemporary journal that the salary of the office was *twenty pounds per annum*! He held it only *six months*, and has fallen a victim to the performance of his duties.

Selections from Journals.

PATHOLOGY.

CASE OF JAUNDICE—FUNGUS GROWTH
ROUND THE ORIFICE OF THE DUCTUS
CHOLEDOCHUS—DILATATION OF THE HEPATIC
DUCTS IN THE LIVER.

At a meeting of the Pathological Society of Dublin, Dr. Stokes presented a series of recent specimens, portions of the liver, stomach, and duodenum of a patient whose case he considered to be unique, as regarded its duration and the extraordinary combination of symptoms which it exhibited. He knew of none similar on record: he had met with none similar in practice. The most obvious disease in the case was jaundice—a complaint to the history of which this case supplied some important additions. The subject of the case was a gentleman, who described himself to have been in uninterrupted good health up to the age of 68. He was of spare habit, temperate, and active, but latterly had taken less than his usual exercise. All through his illness he was seen by Dr. Stokes. He had gone to bed in a state of apparently perfect health. During the night he felt an extreme itching of the skin. This subsided during the day, but returned during

the following night. Dr. Stokes was then called in. He found the skin cool, the pulse quiet, the appetite good, and there was no complaint, except the violent itching of the skin at night; there was a red-coloured sediment deposited from the urine. He continued for a week without any alteration in his symptoms; the stools were natural; there was no appearance of jaundice. At a consultation on the case, it was determined to be irregular gout—a conclusion principally founded on the absence of local symptoms. After a week had elapsed from the first indication of illness (January), he suddenly became deeply jaundiced. There was no fever, and the appetite remained unimpaired during three weeks subsequent; then an intermittent fever set in, which continued, with some intervals of remission, up to the time of his death. This fever Dr. Stokes considered evidently depended on the presence of free bile in the general circulation. Its accession was very sudden; there were no premonitory symptoms: it commenced with lassitude, rigors so severe as to shake the apartment, and which lasted for an hour, and were succeeded by heat, but there was no sweating stage. During the fever the jaundice increased. The febrile attacks occurred sometimes on every second, sometimes on every fourth day; but whether the type was tertian or quartan was not determined. The feces were white. Under the use of mercury and bark he got better, and in the month of April appeared well. The stools were coloured with bile; the urine was clear; the febrile symptoms had ceased. He was then sent to the country for the summer; but about the end of May he went to London, and, while there, had another attack, the immediate cause of which was some excess of diet. These attacks were from that time very frequently repeated: they were excited by various circumstances, such as constipation, errors in diet, slight exposure to cold; but latterly they came on without any apparent exciting cause. After his return from London, a train of new symptoms appeared; he was exhausted by the journey, and on his arrival seemed more dead than alive; his discourse was quite unintelligible; he was in fact talking gibberish, yet he was not delirious; he had rigors, but these ceased after he had been some time in bed, and he became able to speak. Every second day there was a violent paroxysm; the stools were hard and white; constipation now ensued; severe uneasiness was felt about the fundament; purgatives gave no relief; there was constant tenesmus, and straining to pass matter from the bowels after the exhibition of purgative medicines, but only thin matter, in small quantities, was discharged; the jaundice and fever increased in intensity. On the

second day of this constipated state, Sir P. Crampton inserted an instrument into the rectum, with which he removed some hardened faeces; this was followed by seven or eight copious stools, and the patient from that time began to recover. The amendment continued for several months; he became fat and strong, had good sleep and spirits, until he became distressed at the death of some friends, when the symptoms of his illness reappeared. On every day, or sometimes every second day, he had a febrile attack, but without perspiration; this continued during a year. Before each of the attacks in this period he had a sense of great oppression in the head; during the intermissions the tongue was clean, the abdomen in a normal state, and the jaundice had almost entirely subsided. Of late there appeared an irritable condition of the urinary organs; there was sometimes a copious discharge of urine, then suppression, and at the same time anxious desire to pass water; great irritation of the bladder. The treatment adopted was various; relief was latterly obtained by the use of blue pill, together with the sulphate of quinine. During the last eight days of his life the fever continued without intermission, and he died comatose. There had been no physical signs of any organic disease; Dr. Stokes therefore expected that some very local disease would be found to have given rise to all this illness. On examination, the liver was not at all enlarged, but there was a diseased state of the mucous membrane of the duodenum, about the orifice of the duct; the ductus communis was enlarged in calibre, and so were the biliary ducts all through the liver; there were several elevations or prominences on the surface of the liver, formed by true aneurisms or dilatations of the hepatic ducts. This circumstance, Dr. Stokes remarked, he had before met with, and he also referred to a paper by Mr. Lloyd, in the *Medico-Chirurgical Transactions*, in which a similar lesion is described. The orifice of the duct in the duodenum was surrounded by an irregular fungus, resembling an old cicatrix; the gall-bladder was distended with bile, its coats were thinner than natural; the ductus communis was greatly dilated, but the obstruction to the flow of the bile had never been complete; the orifice, though obstructed, remained pervious; none of the other viscera presented any thing abnormal. — *Dublin Quarterly Journal of Med. Science.*

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, July 31.

BIRTHS.	DEATHS.	Av. of 5 Sun.
Males... 656	Males... 494	Males... 479
Females... 606	Females... 470	Females... 461
1262	964	940

DEATHS IN DIFFERENT DISTRICTS.

(24 in number;—*Registrar's Districts*, 129.
Population, in 1841, 1,915,104.)

West—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James... (Pop. 301,326)	153
West—St. Marylebone; St. Pancras; Islington; Hackney... (Pop. 305,309)	200
Central—St. Giles and St. George, Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London... (Pop. 344,200)	195
East—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar... (Pop. 393,347)	202
South—St. Saviour; St. Olave; Be-mondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich... (Pop. 479,400)	204
Total	964

CAUSES OF DEATH.

ALL CAUSES	As of 5 Sun.
SPECIFIED CAUSES	964
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases	962
2. Sporadic Diseases, viz.—	301
2. Dropsy, Cancer, &c. of uncertain seat	123
3. Brain, Spinal Marrow, Nerves, and Senses	103
4. Lungs and other Organs of Respiration	157
5. Heart and Bloodvessels	195
6. Stomach, Liver, and other Organs of Digestion	23
7. Diseases of the Kidneys, &c.	25
8. Childbirth, Diseases of the Uterus, &c.	13
9. Rheumatism, Diseases of the Bones, Joints, &c.	9
10. Skin, Cellular Tissue, &c.	7
11. Old Age	4
12. Violence, Privation, Cold, and Intemperance	38
	50
	35
	28

The following is a selection of the numbers of Deaths from the most important special causes

Small-pox	35	Convulsion	57
Measles	44		
Scarlatina	16	Whooping-cough	23
Whooping-cough	16	Pneumonia	31
Typhus	54	Phthisis	125
		Dia. of Lungs, &c.	7
Dropsy	16		
Sudden deaths	7	Teething	8
		Dia. Stomach, &c.	8
Hydrocephalus	26	Dia. of Liver, &c.	8
Apoplexy	22		
Palsy	9	Childbirth	4
		Dia. of Uterus, &c.	4

REMARKS.—The total number of deaths was 24 above the weekly summer average. The principal causes of mortality arises from diarrhoea, typhus fever, small-pox, and measles.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	29.31
" " Thermometer	65.9
Self-registering do. max. 100.4 min.	36.5
" in the Thames water	70.5 — 65.8
* From 13 observations daily. * Sun.	

RAIN, in inches, 0.0: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 4.9° above the mean of the month.

Lectures.

COURSE OF SURGERY,

Delivered in the years 1846 and 1847,

BY BRANSBY B. COOPER, F.R.S.

Surgeon, and Lecturer on Surgery at Guy's Hospital.

LECTURE VIII.

Difference between gun-shot and other wounds—nature of the wound—danger to late circumstances connected with the velocity of the impinging body—"Gun-shot" wound not to be considered a generic term—Difference in the process of healing of gun-shot and incised wounds—Gun-shot wounds—simple or compound—simple through soft parts—compound, three kinds—Blow from a shot without external lesion—Physical illustration of these two effects—All wounds may be considered therefore as either incised or contused.

Treatment of simple gun-shot wound—Examine course of ball—examine for counter opening—symptoms regulate the practice to be adopted—Mr. Toulmin's case—Eccentric course of balls—balls remain in the body without inconvenience for a great length of time—Case—Compound gun-shot wounds—when limb is to be sacrificed and when saved—Case—Wound of artery—How arteries escape lesion—when arteries are shot through, but little tendency to bleed—why—Penetrating wounds of cavities—of skull—thorax—Bleeding indication of injury to lungs—Treatment—Bleeding sheet-anchor—Cal. c. Opio—Enlarging the wound—when?

Wounds of the abdomen—difficult diagnosis—Contusion of parietes—Wind of ball—sceptical case—Penetrating wound of abdomen—case—Protruding intestine—wounded intestine—case—Lesion of intestine without wound of parietes.

GUN-SHOT WOUNDS.

THESE wounds differ only from others in the complete destruction of the parts which are struck, and resemble, in fact, severe lacerated and contused wounds from any other cause. They require to be treated, therefore, in a similar manner.

A wound made by a projectile body varies as to the amount of injury sustained in proportion to the magnitude of the missile, the velocity with which it is propelled, and upon the concentration of the force destroying the vitality of the part upon which the blow

is inflicted; while the danger to life depends upon the importance of the part injured, and upon the extent of the wound.

John Hunter has most judiciously said, that the three following considerations are connected with the velocity of the impinging body. 1st. "The greater the velocity of the ball, the straighter will be its course through the impinged body,"—a matter of great importance to the surgeon as to his prognosis and treatment, and may be pretty accurately ascertained by investigating the circumstances under which the injury was sustained. 2dly. "The greater the velocity of the ball the more the wound will approach to the nature of an incised wound." 3dly. The greater the velocity of the ball the greater will be the danger of hæmorrhage;" although gun-shot wounds, like other contused wounds, have generally but little tendency to bleed upon their first infliction.

Gun-shot wounds being generally attended with the death of the parts struck, must undergo a process of cure differing from incised wound. Still, I am almost induced to consider the frequent repetition of the term "gun-shot" wound as improper, as it inclines you, gentlemen, to believe that there is some abstract importance connected with the term; while the fact is, injuries from this cause differ in no respect from those accidents, in which the intensity of the force, however impelled, is sufficient to destroy the vitality of the injured part. Any violent concentrated force may produce the same results as a gun-shot wound, and therefore all extreme contusions from machinery and railroad accidents offer precisely similar pathological considerations. Monographs on gun-shot wounds, or, indeed, on any surgical subject, are therefore somewhat dangerous, as they lead pupils, more especially, to consider the subject as separated from the general principles of surgery.

When any part of the living body is by the violence of the injury inflicted deprived of its vitality, it cannot possibly unite by adhesion, but the dead part must first be thrown off by the sloughing process, and the wound ultimately heal by granulation.

Gun-shot wounds may be *simple* or *compound*.

They are termed *simple* when the ball passes through the soft parts only, as muscles and integuments, and are not attended with the same danger as when more important parts are implicated. I have known several instances of soldiers who have received severe wounds, and have become conscious of the fact merely from observing the trickling of blood, and a sensation of slight faintness.

A compound gun-shot wound may be divided into three classes—1st, those in which a bone is broken; 2dly, those at-

tended with the division of a large artery ; 3dly, those penetrating one of the cavities of the body."

Under each of these circumstances, the ball is described as having penetrated the body, but very severe results follow from the effect of a blow from a spent ball, without any apparent lesion of structure, in which perhaps the skin may remain intact, and yet some deep-seated organ be lacerated by the violence of the contusion.

With regard to the difference between the character of a penetrating gun-shot wound and a contusion, a very interesting, and at the same time apt illustration, may be drawn from physical science. Thus we know iodide of nitrogen and gunpowder both to be most explosive bodies ; the former, however, is reduced into its constituent gases in a space of time infinitely shorter than the latter, and with a force much more suddenly excited, and at first sight apparently greater, but the real amount of force generated is probably in favour of the latter, while the initial velocity communicated is in favour of the former. You may easily demonstrate the difference of the action of these two substances. If a few grains of the hydrogen of nitrogen be placed upon an earthenware plate, and struck, a clean round hole is made in the plate, without inducing even a crack in it. Explode a similar quantity of gunpowder in a plate, and, if not confined, it produces no effect, but, if confined in its action, it smashes the plate all to pieces. Thus, in gun-shot wounds, the velocity is so rapid that it annihilates the cohesive force of the atoms of the matter on which it impinges before there is time for the elastic force of the surrounding matter to come into play to resist it, and the destruction is confined to the immediate path of the ball ; while in contusions from a spent ball, the velocity is less rapid, and before the force can overcome the cohesion the elasticity of the structures comes into play, and thus affords a resistance, which prevents the ball from forcing an entrance. At the same time so large a surface of matter has been brought into action to resist the ball, that the shock is far more widely felt than in the former case.

A similar illustration is afforded by the newly-invented explosive body, "gun-cotton,"—the danger in the use of which arises from its sudden conversion into gas, bursting the gun before the elastic force of the metal can resist it ; while gunpowder, from its gradual development of gas, enables that force to come into play, and to resist its pressure on every side, excepting that on which the ball lies, and so the ball is propelled along the barrel. The case of incision is the same as that of a ball of great velocity ; only, in this case, the elastic force is

prevented from being called into play by the cutting edge of the instrument employed, separating the atoms mechanically, and thus at once destroying the very condition of their elasticity,—namely, union and cohesion.

The perfection of this mechanical severing, however, depends on the perfection and fineness of the cutting edge, as a blunt edge, or a jagged one, reduces the wound to the class of contusion by its bringing into action the elastic resistance of the surrounding tissues. All wounds, then, may be considered as more or less of the character of *incised*, or *contused wounds*, according as the instrument of infliction has called into play with less or greater energy the elastic property of the surrounding parts of the body.

I will first describe to you the treatment of simple gun-shot wounds, in which the soft parts only have been penetrated. The first object is to examine if the ball has made its exit or is still lodged in the body. The wound made by the entrance of the ball is small, and its lips are inverted, discoloured, and valvular, while the opening through which the ball has made its escape is much larger, with an everted and ragged edge. Should the ball not have passed through, it will probably be found on the opposite side of the limb to which it had entered, being merely retained by the elasticity of the skin, which should in that case be divided, and the ball removed, with every other extraneous substance that can be felt, by the introduction of the finger into the wound. The wound should be thoroughly cleansed, and a bread and water poultice, or lint dipped in warm water, applied. A ball will often strike the thorax or abdomen on one side, and make its exit on the other, so as to give every appearance of having passed directly through the cavity, while in fact it has made a half circuit of the body, having its course altered by striking a rib or even the abdominal muscles, and being then directed in its circuitous course by the toughness and elasticity of the skin.

If in such a case there be no symptoms of severe collapse,—no escape from the wound of any secretion indicating injury to any important organ,—if, in short, the patient portrays no symptoms of a vital function being disturbed,—there is great reason to believe that the ball has only penetrated unimportant parts, and that the wound is a "simple" one. The course of the ball should now be examined, and its progress may generally be traced by an elevated line (termed a wheal) of a dusky red colour, and very frequently at the termination of this wheal the ball will be found, if it has not made its exit, as would be indicated by the presence of a counter-opening.

When there are no physical signs of the direction which the ball has taken, nor any counter-opening to prove its having passed out, the surgeon must form his opinion of the extent of injury, positively, from the symptoms presenting themselves; or, negatively, from the absence of urgent signs of any internal organ being wounded. The following case will illustrate the application of these views:—On the 31st of January, 1839, Mr. F. Toulmin, of Hackney, was sent for to Mr. A., æt. 23, who had just received a severe gun-shot wound in the abdomen under the following circumstances:—He had been shooting in the marshes with a friend, and, on returning home, his friend walking behind him, Mr. A. turned half round to address him, when his companion's gun went off within two feet of him, and lodged the whole of its contents in his body. Mr. Toulmin was immediately sent for (the patient in the meantime having been carried home and put to bed). Upon examination, he found a large lacerated wound, with discoloured and ragged edges, about two inches and a half above and to the right of the umbilicus. There was no counter-opening, but some discolouration of the skin was perceptible, extending from the wound transversely to the left for about two or three inches, shewing the course of the shot. There was but little bleeding from the wound, which readily admitted three fingers, and the rectus muscle could be felt partly torn asunder. It was ascertained that the charge had passed through a coat, waistcoat, trousers, braces, riding-belt, shirt, and elastic shirt. Mr. Toulmin found the patient in a state of collapse, and looking as if he had received a mortal injury. He was placed immediately between the blankets, and some hot brandy and water was ordered. At 6 P.M. he had rallied, and twenty drops of laudanum were given him by Mr. Toulmin, who desired it to be repeated at bed-time if he were restless.

Feb. 1st.—Has had some sleep during the night. Tongue dry and brown; skin warm; pulse 120.—Effervescent medicine, with hyoscyamus, was ordered.

2d, 8 A.M.—Had some sleep during the night. At Mr. Toulmin's request, I was sent for, and saw the patient at about 11 A.M. A blush of inflammation extended to the right of the wound; pulse 120; tongue dry and brown. Chicken broth was ordered, and calomel and opium prescribed. I examined the wound, and could not feel any extraneous substance; but, from the symptoms, I gave it as my opinion that the cavity of the abdomen was not injured, in which Mr. Toulmin perfectly agreed. We determined, on the strength of this conviction, to exhibit a castor-oil enema.

3d.—Has had a bad night, very restless,

but without much pain; no tympanitis; bowels not relieved; pulse 120; tongue dry, and rather brown; an erythematous blush over the whole of the right side. I made an opening about four inches from the original wound, and removed a quantity of cloth, a coat button, half a brace-button, a piece of riding-belt, with a buckle attached, some wadding, and about twenty shot. The patient expressed himself at once relieved of great weight and tightness, and his pulse became slower.—Was ordered six drachms of castor oil, and to take twenty-five drops of Battley's solution at bed-time, if the bowels acted.

4th.—Passed a quiet night, and had only taken half of the draught. Erythema lessened; bowels not opened; pulse 114; tongue dry. 3 P.M.—Had an enema, which acted in a short time. Saw him in the afternoon, and removed some more shot and cloth from between the original wound and the opening made yesterday. 9 P.M.—Great restlessness; pulse 100; tongue dry and brown; bowels open.—To take his opiate draught, and to repeat it if it does not procure sleep.

5th, 8 A.M.—Had some sleep; pulse 96; tongue still dry and brown.—Ordered soda water and milk, which he relished much. 4 P.M.—Fresh opening made, and some more cloth removed; the discharge from the wounds copious and purulent.—Ordered the night draught, an enema in the morning, and effervescent mixture.

6th.—Better night; had his bowels relieved without the enema; pulse 96; tongue cleaner; profuse discharge; sloughs separating.—Stale beer-grounds poultice. Wine and water and night draught ordered.

7th.—Quiet night; tongue still dry; pulse 102, no motion.—To take castor oil directly. 2 P.M.—No motion, but an enema produced a copious evacuation.

8th.—Better in every respect. Tongue cleaner; copious purulent discharge from wound.—Arrow-root and beef-tea; wine and water. At 6 P.M. was certainly not so well; erythematous inflammation extending over the right hip and down the thigh.—Punctures made in the skin, and poultices ordered. Continue night draughts.

9th.—Tranquil night; tongue still dry.—To continue arrow-root and beef-tea, and to increase the quantity of wine. In the evening he was restless, and the inflammation of the integuments of the hip and thigh increased, and was attended with some pain. An opening was made of at least two inches in length in the upper part of the thigh. Some pus was evacuated, and in a few days some portions of shirt came away, after which the wounds gradually healed, and the cure was completed in about six weeks.

I am obliged to my friend Mr. Toulmin for the detailed history of this case; and a very interesting one it is. The first point to direct your attention to is the treatment Mr. Toulmin adopted to produce reaction, viz. warmth and stimulus. In this case it was quite right to induce reaction as quickly as possible, because there was no *hæmorrhage*, and therefore not only was nothing to be feared from it, but an advantage to be gained; for, had there been any lesion of the abdominal viscera, a reaction was essential to permit of adhesive inflammation setting up at once a barrier to the effusion of the contents of any wounded viscus into the peritoneal cavity. Secondly. The reaction to the extent that it occurred, and the rapidity with which it was produced, was a sufficient evidence of the viscera of the abdomen not being wounded, and therefore we were enabled early to employ purgative medicines as an antiphlogistic remedy; while, on the contrary, had there been any just suspicion of intestinal injury, purgatives would have been most injudicious, however constipated the bowels might have remained. Having decided in our mind upon this point, the treatment, as you will observe, was merely to combat constitutional irritation, as if arising from any other cause than a gun-shot wound, viz. to remove the topical exciting causes of irritation, and to allay the febrile action by restoring the secretions to their natural condition.

In evidence of the eccentric course balls sometimes take, I may relate another case. Major G., of the Artillery, was wounded in a duel; the ball struck him about the eighth rib on the right side, and made its exit as nearly as possible at the corresponding spot on the opposite side. He exclaimed directly he was shot through the body, but did not fall. No severe symptoms followed, as spitting of blood, emphysema, or any indication of the viscera of the chest being wounded, and nothing retarded his recovery but the formation of abscesses in the course of the ball, caused by the leather in which the ball had been enveloped, and the pieces of cloth which had been driven in with it. It is not a matter of so much importance as might be supposed that the ball should be extracted, as there are very many instances of persons in whom a ball remains, and without producing any ill effects from its presence. I remember seeing Sir Astley Cooper remove a ball from an officer of the Indian Service, who had been wounded eighteen years before, and never suffered after the first effects of the wound, until a fortnight previous to the operation I allude to. When riding one day in the Park, his horse plunged severely, and threw him upon the pommel of his saddle; the

blow gave him great pain at the time, and continued unmitigated for several days. Sir Astley Cooper was sent for, who found a moveable tumor just at the tuberosity of the right ischium, which Sir Astley thought was a portion of that process broken off. He cut down upon it, and removed a pistol-ball, which eighteen years before had entered just by the posterior and inferior spinous process of the ilium, and had worked its way to the position from whence it was removed: there can be no doubt it had remained quiescently embedded in a cyst of lymph, until disturbed by the accident resulting from the restiveness of the horse.

You may observe, gentlemen, from the history of these cases, and their results, that there is nothing specific in the treatment of "simple gun-shot" wounds, but that general surgical principles are as applicable to them as to mechanical lesions from any other cause, which produce the death of the part injured.

I have told you, gentlemen, that Mr. Hunter denominated it a "compound gun-shot wound" when a bone was fractured by the ball, and this accident must also be considered as a compound fracture, as there must necessarily be an external wound communicating with the fractured extremities of the bone. But even without the fracture of a bone, a gun-shot wound may be considered as compound, or, at any rate, deviating from the simple kind I have just described. For instance, when a ball presses upon any important part, as an artery, or a nerve, in this case it may become necessary to cut down upon it, and remove it, although, generally speaking, but little advantage is gained by seeking for the missile, and making incisions for that purpose.

When a bone is broken by a ball, the case differs but little from compound fracture from any other cause, beyond the impossibility of the wound uniting by adhesion, for reasons already given, and, perhaps, from the comminution of the fractured bone. In such cases, as in compound fracture from any description of accident, the principal point to be considered is, whether the limb is to be amputated, or attempts made to save it. The surgeon decides upon this point by a strict investigation into the nature of the accident,—as to the extent of injury of the soft parts, lesion of arteries and nerves, or comminution of bone; and also as to the condition and general health of the patient. If he has reason to believe that the hopes of reparation are very slight, either from the severity of the lesion, or from the want of constitutional power to support the process, the limb should be removed as soon as reaction has taken place, should collapse have resulted from the wound. It is, however, often a difficult matter to decide for the best

such occasions ; for it not unfrequently happens, that patients sink under the protracted efforts at reparation, where attempts have been made to save a limb. And, on the other hand, when surgeons have recommended amputation, under the belief that the injury could not be repaired, patients have refused to submit to the operation, saying they would rather die, and yet ultimately have perfectly recovered : this only proves that our just appreciation of the powers of nature are not, and cannot be, always correct. Last summer, I was requested to meet Mr. F. Toulmin, of Hackney, to see a patient who, a few days before, had received a very severe wound on the upper extremity of the left humerus, under the following circumstances :—He was visiting a public garden, to witness a display of fireworks, and while looking on, he felt what he described as a smart blow on the shoulder, as if struck by a stick, and on putting his right hand to the part, he was astonished to find it covered with blood. He immediately went home, and sent for Mr. F. Toulmin, from whom I have derived the following account of the case :—

"I saw him a few minutes after his arrival at home, and found that he had received a severe ragged wound through the deltoid muscle ; the wound was fully three inches in breadth, and had separated the muscle from its attachment to the bone, to which I readily passed my finger, and for some considerable distance downwards, but could not discover any fracture. The arm below the wound was greatly swollen ; there was no hæmorrhage, but the patient complained of considerable pain ; an opiate was ordered, and the whole length of the upper arm was covered with lint, dipped in warm water, and surrounded with oil silk. On the following day, the swelling of the arm had considerably abated, but there was a high degree of constitutional irritation set up. Calomel and opium were ordered, with saline draughts. During the night, I was called up to him, in consequence of the severity of the pain, for which I gave him an additional dose of opium, and promised to visit him early in the morning. At eight o'clock, A.M., I saw him, and thought I could feel some extraneous body ; I therefore made an incision four or five inches below the original wound, and removed a piece of a rough iron pot, about three inches square, in which combustibles had been placed, and which, having burst, had produced the wound in question. The iron pot having been placed on an elevation, had necessarily taken a downward direction. A phlegmonous erysipelatous inflammation, extending from the shoulder to the hand, followed the injury ; this was relieved by incisions through the fascia, which were made anteriorly and posteriorly,

both above and below the elbow, with great relief to the patient." (During this period I had frequently seen the case with Mr. Toulmin, and had no suspicion of the humerus being fractured.) "At the end of a fortnight, in the attempt to rise in bed, he felt something give way, and on the following day I discovered that the bone was broken at its upper third, and the fractured ends much displaced. After dilating the upper and original wound, and removing some portion of the bone with a saw and bone-nippers, we succeeded (for Mr. Bransby Cooper was in attendance) in bringing the ends of the bone in perfect apposition, and, by the aid of splints, retained them so. The bone quickly united ; various portions of dress, however, for some time continued to pass through the wounds in the upper arm, and some small exfoliations of bone. The patient, at the end of three months, was able to resume his business of a publican, and has now as good a use of his arm as he ever enjoyed."

At the period I first saw the patient, I confess I thought there was considerable doubt whether the arm would be saved ; and when it was found that the humerus was fractured, Mr. Toulmin and myself both agreed we should have recommended amputation of the limb, if the health of the patient would have rendered the operation admissible. There was some doubt entertained whether or not the arm was fractured at the time of the injury,—my opinion is that it was ; and I am inclined to attribute the failure in the detection of the fracture to the portion of iron plate, which had so completely covered the extremities of the bone, that when the fingers had been passed into the wound, to search for extraneous substances (as had been frequently done), the bone could never be felt ; and moreover, the piece of iron gave to the limb a degree of solidity unusual in cases of fracture, and so caused a further difficulty in the detection of the nature of the accident. I have no doubt, however, that the subsequent sudden displacement of the fractured bone occurred from the loss of this support upon the removal of the iron plate. The rapidity with which the bone ultimately united was, to me, unexpected, considering the extent of injury to the surrounding soft parts, which are so essential to the formation of the provisional bone ; but the excellent constitution of the patient overcame all difficulties, notwithstanding the severity of his local injury.

When a gun-shot wound is complicated with a division of an artery, attended with severe bleeding, the case requires precisely the same treatment as injury to arteries from other causes, namely, that the hæmorrhage must be stayed, either by tying the vessel at the wound, or cutting down upon

it above the seat of injury; or if, as there may be, too great a destruction of parts to lead to a hope of restoration, the limb must be amputated at once. Such remarks refer to the occurrence of bleeding immediately on the infliction of the wound; but secondary hæmorrhages often occur during the process of separation of the dead from the living parts—a process inseparable from the reparation of a gun-shot wound. Under these circumstances, whether the artery is to be tied above the slough, or the limb amputated, depends precisely upon the same surgical principles as regulate the practice in bleeding arteries from other causes. The constitutional powers of the patient must decide the point. If it be determined to apply artificial means to check the bleeding, and to attempt to save the limb, a ligature should at once be applied to the artery, for I have never seen any good accrue from the application of styptics, pressure, or any other half measures, which, if they fail, as they generally do, a recurrence of bleeding is likely to place your patient in a condition beyond recovery from any means you may afterwards adopt.

I shall be able more fully to explain this doctrine when speaking of amputations.

It is remarkable, in gun-shot wounds, how generally arteries escape being wounded by balls which will almost dissect them from all surrounding structures, and yet leave them intact. This has been attributed principally to their elasticity. It is also equally wonderful that when arteries are torn asunder by shot, how little blood is lost; perhaps only a few drops may be discharged, and the vessel often becomes permanently obliterated by the same process as closes it upon the application of a ligature. When balls penetrate the cavities, the symptoms immediately arising form the best proofs of whether or not the viscera contained within them be wounded, and generally the discharges from the wound throw light upon this subject.

In injuries of the head, the symptoms arising from gun-shot wounds, and the appropriate treatment to be adopted, so completely correspond with injuries from any other cause, that I shall defer speaking of them until I arrive at the subject of injuries to the skull, in the course of my lectures.

In wounds of the thorax, injury to the viscera is more decidedly marked, both as to extent and danger, than in wounds of the head; and bleeding is the principal symptom to be attended to, whether issuing from the wound itself, or coughed up with expectoration: and in proportion to the quantity expelled, so is the danger to be dreaded. It does not, however, necessarily follow that the lungs are wounded because blood is expelled; as a

ball, in its passage through the chest, may not actually enter the lung, and yet produce lesion of its vessels. But under these circumstances the bleeding is not immediate nor profuse, and is unattended with violent dyspnoea. Under all circumstances of wounds of the chest the great desideratum is to diminish the quantity of blood sent to the lungs; this object is attained by bleeding, which must be most freely employed, repeating it to the utmost that it can be carried so long as blood is coughed up, and the dyspnoea urgent. The patient should be kept cool, perfectly quiet, and in a state approaching nausea by tartarized antimony and opium. I place great reliance on the use of opium, as, by allaying irritation, and inducing sleep, it keeps the lungs in the greatest state of quietude which can be produced. Remember, gentlemen, that during sleep both respiration and the pulsations of the heart are greatly diminished, and therefore is this treatment indicated. A broad roller should be applied around the chest, taking care not to cover the wound, and the patient should be placed in such a position as to facilitate the flow of blood through the opening when there is any tendency to hæmorrhage from that source. Should reaction take place, and hæmoptysis recur even after all these means have been adopted, the lancet must be again called into requisition, even to the verge of danger from its use, as it is, in fact, the only channel left of saving the patient from suffocation. The Duke of Richmond, who was shot through the lungs at the battle of Orthes, owes his life to the scientific daring of the surgeon under whose care he fortunately for himself fell. Directly blood has ceased to flow from the wound it may be closed by simple dressing; and if, also, hæmoptysis has ceased, cooling acidulated fluids may be sparingly given, containing nitrate of potash, or some other neutral salt. If, during the treatment, the patient faints from bleeding, the surgeon may safely pass his finger into the wound to search for any extraneous body which may have intruded, and perhaps it may be necessary carefully to enlarge the wound with a probe-pointed bistoury for its extraction. The enlarging of the wound may also be advisable when a large quantity of blood is extravasated into the cavity of the pleura, which would be indicated by an increasing sense of weight and oppression, as well as by the dulness on percussion, bronchophony, tubular breathing, &c.: emphysema, also, might lead to this necessity. The after-treatment I need not dwell on, as it must be regulated by the peculiarities which offer themselves in each individual case, the great object being not too early to allow your patient to indulge in any luxury of diet, although, at the same time, the powers

of the constitution must be maintained, to prevent the liability to dropsical effusions following the severe depletion which has been required.

Gun-shot wounds of the abdomen lead to the most important considerations, and perhaps I may say offer greater difficulties to the surgeon, in forming just diagnostic and prognostic conclusions, than wounds of the head or thorax, in consequence of its size being less determined, its parietes being made up chiefly of muscles, while the cavities of the head and chest are much more definite, from the quantity of bone which constitute their walls. In the firm, contracted, bony, and fixed parietes of the head, slight depression, effusion, or any change which tends to occupy space, immediately produces such marked functional disturbance as to be readily recognised; but the abdominal cavity admits of great increase or diminution of its capacity without any immediate effects being produced upon the important viscera contained within it, or any decided indications of the extent of damage sustained.

Gun-shot wounds of the abdomen, as, indeed, injuries from the application of violence from any other cause, are to be considered under the following heads.

1st. *Simple contusion of the abdominal parietes.*—This kind of accident frequently occurs to civilians in their daily occupations and labours, but must be a rare condition to result from a gun-shot wound, although such circumstances are recorded as resulting from the mere wind of balls, in which I place but little faith, for I once saw near Bayonne a 32-pound shot pass between the thighs of an artillery officer while he was in the act of "laying" a gun, and knocked the tail of his coat off behind him. The shot was fired from a frigate lying in the river not more than two hundred yards from him, and if the wind of a shot could do anything, the gallant Colonel would not, I think, be able to boast of the fine family he has now such reason to be proud of. Contusions of the abdominal parietes, from whatever cause they may occur, are to be treated with fomentations, rest, and general antiphlogistic means, which will be pretty generally found sufficient to restore the patient to health: but this must not be expected to prove the invariable result. Urgent symptoms may follow, even collapse result, so as to render it extremely difficult to form a correct diagnosis: under such a difficulty the prognosis must be withheld until reaction has taken place, to produce which it may be necessary to apply warmth, or even administer stimuli.

When the natural action of the heart is restored, the general heat of the body returned, and all fear of relapse removed, there will be sufficient reason to consider the injury as merely appertaining to the

parietes of the abdomen, and without lesion of any of the viscera. But still considerable precaution is necessary, in consequence of the liability to peritonitis after these accidents. Therefore recumbent posture, and a strict antiphlogistic regimen, should be enjoined, for a surgeon is culpable who would allow symptoms of inflammation to appear, and then apply, as remedy, what might have been previously employed as a preventive.

When the parietes of the abdomen are wounded without either protrusion or injury to its contents, there is but little difference to be observed in the treatment from what has been recommended under their mere contusion; but there is often some difficulty in ascertaining whether the peritoneum, or even any viscus be injured, especially if there be no signs of collapse concomitant with the injury. A finger should be passed into the wound to examine its depth, and the direction the ball has taken, every extraneous substance removed, and a light poultice laid over the abdomen. Purgatives should be avoided until all apprehension of injury to the intestines has subsided, and then the only object to be attained is the healing of the wound, which may be hastened by judicious topical and constitutional remedies.

But, as I have said, the extent of injury which has been sustained from wounds of the abdomen, is sometimes extremely difficult to ascertain, as I will illustrate by the following case, in which I formed a wrong prognosis, although I followed the principles I have laid down.

A few years ago I was sent for to see a gentleman who had, about an hour before I saw him, been shot by an assassin. He had just got into bed as I arrived at his house, and I had therefore the opportunity of immediate examination. I found Mr. D. perfectly free from any symptom approaching to collapse, his countenance was natural and lively, the temperature of his body normal, his pulse unaffected; and he complained of no more pain than was inseparable from a flesh wound so recently inflicted. Upon examination I found a wound in the back, where the ball had entered, situated about the angle of the 7th or 8th rib; I passed my finger into the wound to search for the ball or any extraneous substance, but could not detect anything, nor any indication of the bullet having passed into the chest. No counter opening, no air passing, no emphysema, difficulty of breathing, spitting of blood, or any dangerous symptom whatever. At this moment another surgeon, who had also been sent for, entered the room, and we proceeded to examine the body more generally to discover, if we could, the course the ball had taken, when on the fore part of the abdomen, close to the um-

bilicus, we detected a hard substance immediately under the skin, which was divided with a common lancet by Mr. —, and the pistol-bullet rolled out. The question now arose as to the probable course the ball had taken, and I gave it as my opinion, in the strongest terms, that the ball had not entered either the chest or the abdomen, as from the complete absence of any symptom of collapse, it was quite certain no important organ was wounded, but I said that I suspected a rib was broken, as he had a slight catch in his respiration. The next day the patient was not so well; he became restless, and complained of uneasiness rather than of pain in the abdomen, and most vigorous antiphlogistic means were adopted by letting of blood. Not a symptom of collapse supervened; the bowels were freely opened, the secretions were performed, but in less than a week he died. On examination of the body it was found the ball had passed through the posterior and inferior angle of the chest, between the base of the lung and diaphragm, without touching the lung, so that it probably made its transit during the act of expiration; it then passed through the diaphragm, skirted the stomach, perforated the great omentum between the stomach and transverse arch of the colon, and, without wounding a single viscus, lodged in the muscular parietes of the abdomen; so that, although I was wrong in my conjecture as to the ball not having entered the great cavities, I was quite correct in my views of no vital organ being wounded, and who could have believed the ball to have taken the course which it did, without wounding either the lungs, or some of the abdominal viscera? About a pound of blood was found in the cavity of the abdomen, but no signs of inflammation, which had probably been prevented by the quantity of blood which had been abstracted. Another case, which I witnessed during the Peninsular war, offers so strong a contrast to this, that, I think, without fear of suffering the imputation of seeking military eclat, I may venture to recite it. At the battle of the Perenees, a sergeant, sitting by a road side, attracted my attention from his pallid and pitiable countenance. I asked him where he was wounded, and, in a low tone of voice, he said he was shot in the body. There was a hut close by, and I had him carried in: we stripped him, and found a small valvular discoloured opening just below the umbilicus; nothing exuded from the wound but a drop of blood. The surface of his whole body was cold, although he complained of the sensation of great internal heat, his pulse could scarcely be felt, his abdomen was becoming tympanitic, and death was stamped on every feature of his countenance. He was wrapped up in warm blankets, and I

left him. I went the next day to see him, as we had not moved far from the spot, and found that he had never rallied for one instant, but had died in considerable pain about ten hours after I had left him. Such are the symptoms I have invariably seen follow wounds of the abdominal viscera; such a sequel I have more than once witnessed in cases of hernia, when the intestine has given way, or has been accidentally wounded in the division of the stricture.

When the viscera protrude through a wound of the parietes of the abdomen, the propriety of returning them depends upon the condition in which they are found; they may be wounded, or have been so long exposed to the air as to be unfitted to be restored to their natural cavity. In gunshot wounds they are very liable to be torn, but when the wound of the abdomen has been inflicted by a cutting instrument, the viscera more frequently escape lesion, though they often become protruded through the opening, which, indeed, sometimes requires to be dilated before the intestine can be returned.

When the intestines are wounded, as well as the parietes of the abdomen, by a shot, there is generally little left for the surgeon to do; but the treatment which alone can avail in these cases is so precisely similar to what is to be followed in strangulated hernia, when the intestine has given way either from sloughing or ulceration, that I shall postpone the account of the mode of treatment to be adopted until I treat of hernia especially.

The last class of injury to the abdomen I have to describe is, that in which the viscera are ruptured without any wound through the abdominal parietes. A spent ball is the most likely kind of injury to produce such an effect. They are not uncommon accidents to meet with either in military or civil practice, but offer little hope of remedial assistance.

The symptoms which are produced by the rupture of an intestine, or, indeed, any of the important viscera, from a blow on the abdomen, are usually sufficiently well marked to point out the precise nature of the injury which has been sustained. From a state, perhaps of robust health, the patient is at once reduced to the most hopeless state of prostration; the cold sweat which overspreads his body, the ghastly anxiety of the countenance, the scarcely to be felt pulse, and the patient's own conviction of approaching death, all forebode the fatality of the injury; and one of the common expressions of the sufferer is, that all medical efforts are in vain, for that he feels "struck by death." Such urgent symptoms, perhaps somewhat less violent in degree than what I have described, do, however, sometimes

supervene upon a blow on the abdomen, without any rupture of a viscus having occurred; indeed, many cases are on record of persons having dropped down dead, from only a slight unexpected blow on the scrobiculus cordis, and without the cause of death being afterwards apparent: so sometimes does a blow produce collapse immediately on the infliction, the effects of which, however, are transitory, and re-action comes on, either spontaneously, or by the assistance of stimuli; therefore a surgeon is not always in these cases to consider collapse as indicative of a hopeless state. In such cases as these in which re-action takes place, the antiphlogistic regimen should be adopted, so soon as the pulse and return of the natural warmth of the body point out the restoration of the vital powers; and this with the view of preventing peritoneal inflammation, which is so likely to follow. Purgings, however, is not to be the means employed for subduing, or rather keeping down inflammatory action; for should an intestine have received such an injury from the blow as to tend to its ulceration, although it may not have ruptured it, the employment of purgatives by increasing the peristaltic motion of the bowels, would disturb the means by which nature repairs the hurt which the intestine had received. So that I should say, in cases of supposed rupture of intestine without a wound in the parietes of the abdomen,—in cases of wounded and protruded intestine,—in cases of ulcerated intestine, in strangulated hernia,—or even in the case of ulceration of a bowel, caused by protracted chronic inflammation; in all, purgatives should be avoided, at least, until time has been given for nature to exert her efforts, undisturbed, to repair the direful injury, although in each, should re-action come on, the antiphlogistic plan must be adopted.

CLINICAL LECTURE

GIVEN AT

ST. GEORGE'S HOSPITAL,

On May 25th,

By CESAR HAWKINS, Esq. Surgeon to the Hospital.

[Reported by MR. WALTER THOMSON.]

LECTURE VI.

Inguinal aneurism—Ligature of external iliac artery—Delirium—Secondary hemorrhage—Cure.

GENTLEMEN,—I propose to-day to draw your attention to a very interesting case which has been a long time under your observation, the consideration of which I have purposely deferred, in order that the case

might come near to its termination. I allude to a patient named James Roberts, in whom I tied the external iliac artery a long time ago. He was admitted on Jan. 5th of the present year, with the following history:—Six months since he was run over by a carriage, which caused a wound of the leg and foot. This had nothing to do, however, with the disease for which he was now admitted. Soon after leaving the hospital he felt *pulsation* at the upper part of the left thigh, unattended with pain. About two months since (about four months, that is, after he first noticed the pulsation) he observed for the first time an enlargement, but as there was no pain he continued to work as usual up to five days previous to his admission: the pain then became so severe as to oblige him to lay up. When admitted he had a large pulsating tumor, apparently commencing high up in the femoral artery, probably at the lower part of the common femoral, or just at the division into the superficial and deep vessels. The tumor, when first seen by me several weeks before his admission, was distinctly aneurismal, flat, and about 3 or 3½ inches in diameter, pulsating strongly, and quite soft, as if without coagulum; it extended a little to the outside of the line of the artery, but chiefly to the inside, leaving a small space free below Poupart's ligament. I endeavoured to persuade him to have the operation performed, but he repeatedly refused to come into the hospital. It underwent sudden increase of size, with great pain, five days before his admission, and within the last thirty-six hours had much increased, especially upwards. Observe here the order in which the symptoms followed one another, for they do not invariably occur thus. First, you see pulsation was noticed, not attended by pain; then a tumor appeared; and lastly pain came on, as if, when the tumor had become much distended, it had produced pain by its pressure on the nerves.

On admission it was very prominent for a considerable space, and altogether was about five inches in each direction, being felt within the pelvis for about an inch above Poupart's ligament, and it contained a little solid coagulum. The pain was very great, so that he had not slept for three nights, and his tongue was white, and the pulse quick.

The pain in these cases varies, and depends in some measure upon the situation of the tumor. Aneurism of this part of the thigh may be in the common femoral artery below the origin of the epigastric and circumflex ilii arteries, or it may involve these vessels, or it may commence lower down at the point where the deep femoral vessel is given off from the common trunk,

or in the superficial femoral below this point; and its situation in one or other of these parts materially influences the supply of blood capable of being sent to the part below after an operation has been performed, and affects also the chances of success of such operation, as the blood passes more or less freely into the aneurismal sac. The tumor in this case appears to have commenced about the division of the trunk into its superficial and deep branches, and as the disease proceeded, it finally, as you have seen, ascended till it passed upwards under Poupart's ligament.

The sudden increase of size which the swelling underwent is a circumstance not unfrequently observed. You would expect a rapid enlargement to take place sometimes if the disease were a true aneurism, when the inner coats of the artery, having been distended to the greatest extent of which they were capable, at last burst suddenly, and thus formed a false one. But it is more common (at a later period however), when a circumscribed aneurism having gained, as it were, all the cellular tissue in its neighbourhood, to form its coats, can dilate no more, and bursting, becomes diffused. In illustration of this you may remember a case which was in the hospital about a year and a half ago, under my care, where a very sudden increase took place in an aneurism in the ham, so that the tumor on the patient's admittance into the hospital, extended half way down the calf and some way up the thigh, and nearly round the knee. I tried pressure, but it was not well borne, and the rapid increase of the tumor obliged me to tie the artery without delay, by which the disease was cured, and the large tumor nearly absorbed, when he left the house. If the enlargement be very rapid, gangrene of the limb (if the aneurism be seated in an extremity) may take place on account of the collateral circulation being interfered with by this diffusion. Such an occurrence took place in the patient from whom this preparation of popliteal aneurism was taken, and he was obliged in consequence to lose his leg. The account given in the catalogue of the museum is, "enormous aneurism of the thigh; the artery and vein may be seen lying on the tibial side of the tumor, and the popliteal nerve close to the incision (made in the centre of the posterior aspect to show its structure) between it and the blood-vessels. At the time of the operation the nature of the disease was not certainly known, but the limb was removed by Mr. Keate, as mortification was beginning in the toes from the pressure of the aneurism on the vessels. The tumor was by some supposed to be of a malignant nature, as it was quite firm and presented no pulsation, except where the artery passed over

its surface." This preparation illustrates the two circumstances of the supervention of gangrene below the disease, and of the complete change which may take place in the appearance of the tumor. You may see that it is almost entirely made up of a large mass of solid coagulum, diffused without a regular sac, and without, as you have heard, any positive indication of the nature of the swelling.

The next remark I will make is respecting the great increase of pain which, in these cases, is often most intense, and sometimes gives rise to so much constitutional disturbance, that you might be led to suppose that the patient was suffering from an attack of fever: but you must distinguish between the two conditions, as the existence of constitutional disturbance arising from pain is no reason why the operation should not be performed. In the first case of aneurism on which I operated, a femoral aneurism, the patient suffered extreme pain, so that he hardly slept at all for three weeks before his admittance; and he had a pulse of 120, with frequent rigors; but believing that these symptoms were from pain, and not from fever, I tied the artery, which was enlarged for some distance above the tumor. After the artery was tied, the patient declared he was "in heaven," compared with his condition beforehand, and slept as he had not done for full three weeks preceding the operation. The poor fellow died five years afterwards of aneurism of the arch of the aorta. If actual fever be present, however, the operation must not be performed.

Here, then, was an aneurismal tumor, increasing suddenly and to a great extent, and by the pain attending it producing much constitutional disturbance; a case not permitting any delay, and I accordingly operated upon him directly. Our notes tell us, "the operation was performed about an hour after his admission. The usual curved incision about four inches long was made through the parietes of the abdomen and the vessel easily exposed, and an aneurism needle was passed readily around it, as it seemed, without force." I made the incision through the abdominal parietes in the manner recommended by Sir Astley Cooper in preference to the one directed by Mr. Abernethy, as the former puts it in your power to enlarge the wound, by extending your incision at the outer end, a proceeding which may be necessary if the artery cannot be tied low down; and when modified it allows you, if it should be necessary, to tie even the common iliac artery, an operation which has been performed with success. "At the moment of the point of the needle coming through the sheath at the outside," the notes go on to say, "arterial blood was seen to come out in a stream from within the sheath; an artery of some size lay on

the sheath, passing down to it apparently from the epigastric, and ran upwards as far as the iliac artery was seen; but the blood did not come in a jet, as if from any vessel, but in a continued flow such as might be expected if the sheath was raised from the artery by a prolongation of the aneurismal sac, through which the course of the needle would run. After some examination the ligature was left double, and the pulsation in the tumor being apparently quite stopped when the ligatures were each drawn upwards on the finger, they were tied as far apart from each other as they would allow. The bleeding seemed by this to be stopped. On further examination, however, it seemed that there was still some, though much diminished, pulsation in the aneurism; and therefore another ligature was carried round the iliac artery an inch and a half higher up, and as the artery was dilated to nearly twice its usual size, much of the sheath (with the artery lying on it) was tied by the single silk, which gave more pain than before, and quite stopped the aneurismal pulse."

It is rather a startling occurrence to have arterial blood coming out in a full stream during an operation upon any of the large arteries, and it made myself and colleagues naturally anxious to discover the cause. Bleeding may come from the artery under operation, if its coats are rendered easily lacerable and thin by disease, and should happen to yield while the needle is being passed around the vessel. This could not have been the case in our patient, I believe, as I did not use an amount of force in passing the needle sufficient to have ruptured the coats, unless they were very fragile indeed. Again, if an arterial branch coming off within the sheath should happen to be wounded just at its origin, it would bleed nearly in the same manner that the parent artery itself would if it were wounded there. There was, as I have said, an artery running superficially on the sheath; the bleeding did not come from that, however, and it was not likely that another branch was given off so close. I cannot in any way satisfactorily account for the hæmorrhage, but the most probable explanation is that the aneurism sent a prolongation up the back of the sheath, and that the opening this above where any tumor was visible, gave rise to the bleeding.

It was in consequence of this hæmorrhage that I tied the artery both above and below the point from which it appeared to come, both in case there should be a tear in the coats or a wounded branch, and to render the artery secure from ulceration; as, if separated much from its connections, it would have been unsafe to have put only one ligature at the centre of the part where insulated by the blood of the aneurism and by the operation. The ligatures

being secured you saw there was still "some pulsation" remaining in the aneurism. This again was a circumstance we could not satisfactorily account for. Was there a double vessel, as in a case related by Mr. Shaw where there were two superficial femoral arteries in one sheath? Unless this was the case, the only way of accounting for it is by supposing that the pulsation depended upon the influx of blood by means of the collateral vessels, which was not very likely, as the pulsation was stopped by the single ligature I afterwards applied higher up. Altogether it seemed very obscure both to my colleagues and myself. Continuing the notes, we find "a small piece of oiled lint was placed along with the ligatures between the parietes, which were brought together elsewhere by several sutures, and the wound dressed with plaster in the intervals." The dressing the wound in with lint is a proceeding which I have always adopted in aneurism in order to prevent any confinement of matter, from which I have seen much mischief, when this precaution has not been taken, and the lint may be taken out a day or two after when suppuration is beginning. In this particular operation also sutures should be employed in sufficient number and depth effectually to secure the abdominal parietes and prevent the formation of hernia, by union of the skin with separation of the cut surfaces of the muscles below. Further on we find, "about two hours after the operation a fit of coughing made a small quantity of blood ooze out of the wound under the dressings, but it did not return, nor did it feel as if much were in the iliac fossa. Both feet being cold, a hot bottle was applied, and the limb enclosed in wadding and flannel, by which the warmth was soon restored. The pain existing previous to the operation was quite removed." The man, you see, was in a low state from exhaustion before the operation as well as from the operation itself, and the temperature in both extremities was consequently lessened; and not only in that in which the main artery had been tied. At first he did very well.

On the 6th we find, "A good night was passed with quiet sleep after two doses of *Liq. Opii Sedativus*." In the afternoon "pulse 108, soft—abdomen free from tenderness, but flatulence rather complained of." At 9 P. M. of same day "says he feels restless, and there is tenderness of the abdomen on the left side near the wound. Pulse 108, full and soft. Tongue rather dry. Countenance calm. No feverish heat," so that the tenderness probably depended upon the flatulence.

Next day, "says he is comfortable, and has no pain in the abdomen. Pulse 116, full. Tongue rather dry. Slept at intervals during the night. No anxiety of countenance."

But on the 8th, (the operation having

been performed on the 5th,) you will observe, a fresh set of symptoms made their appearance. "Some redness showed itself around the wound and the abdomen became slightly tympanitic." On the following day, "one suture and the dressings were removed yesterday. The redness continuing with some slight induration, the remaining sutures were this day taken out. There has been some pain and restlessness during the night. He has had no sleep. Bowels are confined. Tongue moist. Pulse 100. Abdomen tympanitic. Yellow tinge of sclerotic;" and on the evening of the same day we find, "bowels acted three times from half an ounce of castor oil taken in the afternoon. There has been much delirium since six o'clock."

On the 10th, "Restless night, with no sleep. Delirium continues and has increased. Constant attempts to get out of bed. The wound gaping, with much offensive discharge." At 10 o'clock A. M. of same day, "The delirium has much increased. Abdomen tympanitic with no tenderness. Feet extremely cold. No anxiety of countenance though much hurry, and his answers are given at random." At 2 P. M. "Still much delirium." At 4 P. M. "Has had some sleep."

Here, then, for two days and a half, our patient had been suffering an attack of delirium and of inflammation of acute character in the cellular tissue around the wound. What was done for him was to administer repeated large doses of opium, and to allow him a certain quantity of gin, to the use of which he had been accustomed before he came into the hospital. Under this treatment we consequently find on the 11th, "Has passed a good night. Delirium gone, abdomen less tympanitic, almost of natural elevation. Bowels not open. Pulse 96, soft." At 2 P. M. "Tongue coated with a yellowish fur, but more moist. Having taken seven grains of opium, in the fourteen hours from 10 P. M. on the 9th to 2 P. M. yesterday the 10th, five good hours' sleep were obtained before he was awakened to take food." This it was necessary to do, as his respiration was getting exceedingly slow, only thirteen inspirations being taken in a minute, and of course it is not right to let a patient sleep too long after taking such large doses of a narcotic drug, lest it might become impossible to rouse him. He continued all night under the influence of the opium, was not this morning at all drowsy, and awoke calm and perfectly rational. He has taken four oz. of gin, with milk and arrowroot, but cannot take beef tea. To continue four oz. of gin, &c." The furious nature of the delirium which you saw here probably depended upon the very intemperate habits of the patient. He fortunately did not break through the attachments of the wound, or loosen the ligatures or the

vessels so as to bring on secondary hemorrhage, notwithstanding his violence and constant movements. The delirium being thus stopped this portion of the case now went on very well, the wound contracting and its edges becoming approximated. I find in the notes for the 11th, "The redness of the skin, with subjacent hardness of the cellular tissue of the left side, is less extensive, and the secretion of pus is much more copious and more healthy, coming deeply from the wound and from under the skin of the abdomen above the wound to the distance of two or three inches when opened by the director, and for an inch below the lower edge of the wound, quite to the prominence of the aneurism; some thin sloughs having separated healthy granulations are now seen from the muscles. About half an inch of skin, chiefly in parts of the upper lip of the wound, has sloughed. Aneurism smaller, and the centre is harder than yesterday. Temperature of limb good."

On the 12th, "Less redness. Abdomen natural, no tympanitis."

On the 15th, "Has passed a good night. Redness has nearly gone. Very little discharge; a portion of cellular tissue has sloughed, and large prominent granulations are visible. Edges of wound slightly approximated; sec small and solid."

In an operation on the external iliac artery there is more danger from inflammation, sloughing and suppuration, than in operations upon arteries in general, on account of the large quantity of loose cellular tissue in the immediate vicinity of that vessel. The peritoneum also would, at first sight, appear very likely to become inflamed from its contiguity to the wounded structures. This does sometimes happen, but not nearly so often as you would expect; and it is curious that in one case perhaps where this membrane has been uninjured during the operation, it may happen to become affected by inflammation afterwards, while in another, where it may have been wounded, it may be found healthy, and the wound in it healed.

The occurrence of foul suppuration in a case of this nature may also prove fatal, as it did in the case where Mr. Keate tied the external iliac artery last summer, under your observation: of course there is also another danger, namely, that the patient may perish from the absorption of pus and the consequent formation of secondary abscesses, as was the case with the patient from whom this preparation was taken. He died, the catalogue tells us, "fifteen days after the operation, of pneumonia and secondary deposits in the kidneys."

Our patient Roberts fortunately escaped all these dangers, and the sloughs came away even from between the aneurism and the skin luckily without opening its sac, notwith-

standing the muscular exertions he made during his delirium. Nothing particular occurred (the case going on well) until the 22nd—seventeen days, that is, after the operation, and about the time when you would expect the ligatures on the artery to separate. The time at which this takes place varies according to the size of the artery, and according to the state of health of the patient, being later with a large artery than with a small one, and earlier if the vessel be diseased or the patient in a bad state of health. About fifteen days is the time you would expect the ligature to come away from an artery of the size now under consideration.

If the process of separation goes on healthily, the ligature gradually cuts its way through the vessel; lymph is effused round the spot where the ligature is applied, and coagula form in the vessel on each side of that spot; these coagula with the lymph effectually close the orifices of the divided artery, and prevent any secondary hæmorrhage taking place when the ligature comes away. But if the artery be unhealthy, these processes take place but imperfectly, and bleeding is liable to occur from the ends of the vessel being only partially closed.

On the 22nd, then, the notes say, "slight arterial hæmorrhage took place while dressing the wound. On the following day there was slight bleeding in the evening."

On the 24th, we read, "house-surgeon called up for bleeding in the night, and some styptic dropped in: blood lost about two oz. Now (half-past two P.M.) there is a small coagulum in the wound, which has united except where the ligatures are, but the granulations and edges of the skin are dark and unhealthy looking, with soft prominent granulations from which perhaps the bleeding comes. Pulse ninety-two. Much pulsation in the aorta in the abdomen, visible on the surface. Tumor smaller and quite hard." There was some Italian styptic applied, which did not probably do much, as on the first occasion the bleeding stopped before it was used. With regard to the source of the hæmorrhage, subsequent events proved that it arose from the separation of the ligatures, but granulations will sometimes bleed very freely, and two ounces, which was the greatest quantity of blood here lost at one time, is not at all too much to come from such a source; particularly as they were, as the notes inform us, soft and prominent. The nervous state of the patient, evidenced by the pulsation of the aorta, would have tended to rupture the delicate blood vessels of the granulations.

On the 25th, "there was some hæmorrhage this morning, but not considerable." "Very slight hæmorrhage on the 26th also."

On the 27th, "no more hæmorrhage; two ligatures, with the coagulum which remained in the wound, have been removed." The ligatures probably having separated on the 23rd, when the bleeding began.

On the 29th, 4 A.M. "some hæmorrhage, several ounces more than before, easily checked by the styptic." 1½ P.M. "more bleeding, very slight, easily stopped by the same means. Some ice applied to the part, and gallic acid administered internally."

February 1st, "no recurrence of hæmorrhage. Last ligature removed. Aneurism diminished considerably," so that now some enlarged glands became perceptible which had before formed part of the tumor.

Here, then, the patient was in considerable danger each time the bleeding recurred. The blood, which was in too great quantity to have come this second time from the granulations, might have come from either the lower or the upper opening of the artery, and it would have been difficult to say from which, but it happily stopped without any thing being done. Neither the styptics applied, nor the gallic acid taken, had probably much to do with its cessation; nature, no doubt, did the most.

When secondary hæmorrhage occurs to any great extent, after an operation upon an artery, it may generally be stopped by well-regulated pressure applied carefully over the whole limb, and by graduated compresses applied (when the case admits) to the artery above the aneurism, care being taken not to stop entirely the supply of blood to the parts below. You will see hereafter that the second attack this patient had was controlled by pressure alone.

If in any case bleeding occur in any quantity, and return frequently, in spite of the pressure, the next proceeding is, not to cut down upon, and try to put a ligature on the vessel at the seat of the operation, where it would probably be found unhealthy, and disposed to ulcerate again, but to tie the trunk higher up. In a case of hæmorrhage from a stump, after amputation, where the supply of blood is not great, this will, in most cases, suffice; and it will also be effectual in many cases of secondary hæmorrhage from aneurism; sometimes it will fail.

This preparation from our museum was taken from a case in which tying the artery above was unsuccessful. The patient, named Ryland, a carrier, was admitted, August 1st, 1827, labouring under popliteal aneurism, which had existed about nine months. Sir B. Brodie performed the operation of tying the femoral artery on the 9th of August. On the 23d the ligature came away, and he appeared to be doing well. On the 6th of September hæmorrhage ensued, without any apparent cause. On the 8th the artery was taken up at a part

above where the first ligature was originally applied, and with apparent success, but a month afterwards bleeding occurred from the second wound. Hæmorrhage recurred again and again until the 2d of November. Mortification of the foot then took place, and he died. On examination, the artery was found ulcerated above where it had been tied, and small specks of bone were here and there to be discovered in its substance.

But what must have been done in our patient had the bleeding continued? A ligature had already been placed upon the external iliac artery: the next vessel higher up was, then, the common iliac. To tie this vessel even in the natural condition of parts is not an easy operation, but after so much inflammation and suppuration, it would probably have been impossible to have reached it without opening the cavity of the peritoneum, in consequence of extensive sloughing and adhesion of the cellular tissue of the abdominal parietes and iliac fossa. Nor was it certain from which opening the blood came—it was, at least, as likely to be from the lower end, and had the hæmorrhage continued, the case would most likely have left us but little resource.

On March 16th, and for a few days before, he complained of slight numbness in the leg. There was on that day no pain, and the sinus was filling up. He had been walking about the ward daily for about a month, and on the 24th he went out, as he could not be persuaded to remain any longer in the house, and I hoped the better air might succeed in restoring his health.

Now a fresh part of the case commences. On April 9th, a fortnight after he went out, he was readmitted, and gave the following account of himself:—"On reaching home on that day he complained of feeling giddy, and of general uneasiness, and he took to his bed, which he has kept ever since. Soon afterwards he had rigors and pain in the right nates, the wound from the operation discharging the same as before, and not in increased quantity." On his admission this morning he had a furred tongue and weak pulse, cold skin, and pale anxious countenance, and very low spirits. There was a large abscess over the right nates (the operation was performed on the left iliac artery), which was punctured, and more than half a porringer of very fœtid pus escaped."

I punctured the swelling first with a grooved needle, in order to ascertain the nature of the fluid, and to see whether it had any connection with the blood-vessel. Pus only flowed, and I afterwards opened it freely. Now the question naturally arises, why did this abscess form here? There

was a sinus existing in the opposite groin, and it was just possible that matter might have been confined there, and have made its way across the bottom of the pelvis through the opposite sciatic notch, and thus come to occupy the situation of this abscess; but the sinus was not large, and there did not appear to be any confinement of its contents, nor did it seem probable that it was a secondary abscess following absorption of pus from the sinus. I cannot with certainty assign the reason, but I think it not improbable that it was altogether unconnected with the wound, and that it occurred from the bad state of the patient's health; and you know that this is a situation especially liable to abscess, when they form from that cause. He at first did well. The notes for the 12th of March, I find, tell us, that "the probe does not pass into the wound so far as before he left the hospital,"—a circumstance which would lessen the chance of the abscess being connected with the sinus.

On the 14th, "There is very little discharge from the abscess." On the 16th, "Purulent discharge is less in quantity, and thicker. Pulsation is perceptible in the femoral artery below the tumor, and close to its lower end. Remains of aneurism very firm and small."

Two days after this we find something more, however. "Hæmorrhage took place last night from the sinus to the amount of two or three ounces: it ceased spontaneously. There had previously been much pain in the part, which was relieved by the loss of blood."

On the next day—"Pulsation may be felt where the aneurism existed."

On the 20th—"A little more blood oozed in the night."

Next day—"Hæmorrhage again took place at 5 A.M. to the amount of half a pint (according to the account given by the night-nurse). Countenance pale. Pulse weaker."

Here, then, was a new feature in the case. The return of pulsation, and recurrence of the hæmorrhage at the same time, being obviously connected, and not allowing us to suppose that the bleeding came from the granulations; besides it was in too great quantity to come from any source but from the aneurism or an artery. A return of pulsation in an aneurismal tumor after a ligature has been put upon the artery above it, is an event which sometimes happens, and it may depend upon several causes. It not unfrequently arises from blood finding its way, by a retrograde current, into the sac by means of the collateral arteries after they have enlarged. When it arises from this cause, it soon passes off again under the employment of pressure; and notwith-

standing its reappearance, you need not feel much anxiety concerning the ultimate success of the case. But it may arise from another cause. Here is a preparation taken from a man who had a popliteal aneurism, in which the disease returned after having been apparently cured by operation at the time I was a pupil of the hospital. The patient was admitted in 1821, and the account annexed to it is, "Popliteal aneurism from a patient, Buck, who was admitted under the care of Mr. Gunning, for a large aneurism in the ham. The superficial femoral was tied, and the patient left the hospital. In 1825, he was readmitted under Mr. Jeffreys: pulsation had reappeared in the pouch about six months previously. The choice of having the artery again tied, or having the leg taken off, was given to him. He preferred the latter, and died a few hours after the operation, apparently of fright." Perhaps had the case occurred in these days, and the ether been administered, it might have had a more successful termination. If you examine the preparation, you will perceive that the artery between the aneurism and the ligature is nearly as large as in its natural condition, and, at the same time, one of the anastomotic branches is of large size, and communicates directly with the sac; so that a return of the tumor took place because the blood entered the tumor directly, instead of in a retrograde manner, as is usually the case. I remember having my finger on an inguinal aneurism which burst while the patient was being brought into the theatre, in whom Sir B. Brodie tied the external iliac artery; and this case shews a third source of supply of blood to an aneurism. The coats of the aneurism sloughed subsequently, and much hæmorrhage took place, which was ultimately fatal, because the circumflex ilii and epigastric arteries both opened into the sac itself. You will understand, then, that if the blood enters the sac directly by means of considerable vessels, a *renewal* of the disease may take place. This remarkable preparation has the following history connected with it:—"Large aneurism of the superficial femoral, for which a ligature was applied to the external iliac artery by Sir B. Brodie, in May 1839, and the patient died in July 1843, having presented the following peculiarities in the cure of the aneurism. George Bean was admitted into the hospital with a pulsating tumor of the size of a pullet's egg, situated in the left groin, and presenting all the characters of an aneurism. A ligature was applied upon the external iliac, and all pulsation ceased immediately. Everything went on well, and the patient was discharged from the hospital cured three months after the operation. Three months after his discharge, he was

readmitted with pulsation (which had then existed about a month) in the tumor. Graduated compresses and a roller were applied over the tumor and round the body and limb. This treatment was continued for about two months, when all pulsation and sound again disappeared. A year afterwards he was again seen, when it was observed that there was a slight recurrence of the pulsation, but without any increase in size. Two months afterwards the tumor was observed to have again become larger, but all pulsation and sound had disappeared. From this time it gradually and steadily increased, and in the course of the ensuing twelve months it grew to the size of the egg of an ostrich, without ever presenting either pulsation or sound of any kind. In January 1843 the tumor became stationary, and some time afterwards it began to diminish: the decrease in size continued until July of the same year, when the patient died of phthisis."

This case presents you with a curious instance of the recurrence of pulsation in the tumor, and subsequent growth of the aneurism. Its cause is not quite apparent; but you may see that the main artery has a free communication with the tumor.

Our patient Roberts had no return of the tumor, though there was a return of pulsation and of hæmorrhage; and the course to be pursued again became the subject of anxious consideration. "Pressure, as much as he could bear, was applied," our notes tell us, "by means of compresses of lint placed in the course of the femoral artery, and a leather splint over them, and the whole limb bandaged from the foot to the hip with a moderate degree of tightness.—Complained of a great deal of pain from the pressure." No further bleeding took place, and he was beginning to recover, when another symptom arose which is very remarkable, and has continued up to the present time.

On April the 29th he complained of "violent pain in the leg, which had prevented his sleeping." The countenance was anxious, he had no appetite, sweated much, and was very low-spirited.

On May 1st the pain was somewhat less; but on the 4th our notes say—"Countenance haggard; lies in a very drowsy state, and, when roused, speaks in a very languid manner; sweats a great deal, and had diarrhoea this morning."

On the 5th these symptoms subsided: he became more lively and cheerful, but there was "continued dull aching pain, which was rendered more acute by the least touch, all down the thigh and leg."

On the 7th—"Was very well yesterday till the afternoon, when he had rigors, followed by sweating. This morning he has sweated much, but has had no more rigors

He is much depressed. There is less pain in the thigh, but he complains of great numbness in it, and of inability to move it," and he has continued in this low state, though improving lately, and able to get out of bed yesterday; but he looks haggard, and I cannot even yet consider him perfectly safe. The rigors and violent pain, with the high constitutional disturbance, made me suspect that there was inflammation and suppuration going on deeply, and irritating some of the nerves within the pelvis at their roots: thus giving rise to the pain down the limb. But it has lasted too long, and he is too much improved in health, for this to have been the case; and, had suppuration taken place, the matter would have shewn itself before now.

If it be not owing to this, it shews a very bad condition of the nervous system; and, that this is the case, is rendered probable by the nature of the remedies which have at each relapse roused him from his low and depressed state. He has been, I may say, almost kept alive by increasing the quantity of stimulus allowed him, and he has been taking daily eight ounces of wine and twelve ounces of brandy, and as much eggs and brandy, for some days past, besides bark and the mineral acids.

Such, then, has been the progress of this case, and it has presented many points worthy of attentive consideration, bearing both on the treatment of aneurism generally, and of wounds, especially of those occurring in persons of intemperate habits. He has been for the last few days going on well. There was still some discharge from the groin on the 25th; and on that day the notes are—"Complains of a burning pain in the leg, and it is cedematous, which, he says, is generally the case. The least touch gives him the most acute pain, but the foot feels rather benumbed."

As long as the sinus continues open, I cannot consider him perfectly safe. He will soon leave us, however; and, if he is careful, and lives quietly and temperately, he may find the change beneficial, and I hope he may ultimately recover.

Aug. 14th.—This patient has slowly improved up to the present time, but is not yet quite free from nervous pain in the limb, nor is he yet able to walk with much vigour, and he has required stimulants in the same quantity, to prevent his again becoming dangerously weak.

Original Communications.

ON SOME POINTS CONNECTED WITH THE HISTORY, PATHOLOGY, AND TREATMENT OF DIABETES MELLITUS.

By CHARLES ELAM, M.B. Lond.

University Medical Scholar.

[Concluded from p. 294.]

It is unnecessary to dwell upon the diagnosis of Diabetes Mellitus, the saccharine character of the urine being perfectly distinctive. With regard to the tests for sugar, it may be mentioned that the one proposed by Mr. Moore, of Birmingham, is by far the easiest of application, and most free from any source of fallacy. It consists in boiling the urine with half its bulk of liquor potassæ, whereby the grape sugar is converted into melassic acid, which gives a deep brown colour to the fluid. This test has a merit which does not belong to the other tests—viz. that it does not succeed with the ordinary (cane) sugar, when added to healthy urine: thus serving as a means of diagnosis between the true and the feigned disease, independently of general symptoms.

The source of this sugar, and the question thereon pending as to whether diabetes be a local or a general disease, has been long a matter of controversy. It has been alternately attributed to the kidneys, the stomach, the skin, the liver, and every organ where such changes could possibly be supposed to arise. Dupuytren attributed the existence of sugar to a "morbid state of the kidneys." Cawley and others supposed, in the absence of any correct knowledge of the process of secretion, that the tubuli uriniferi were enlarged, and that the chyle was thereby allowed to mix with the urine. Dr. Home supposed that it arose from a "defect in the animal or assimilatory processes by which the aliment is converted into the nature of our body." Dr. Lubbock attributed the formation of sugar to the suppression of the secretion from the skin, the carbonic acid of which he supposed might unite with the hydrogen of some part of the body, and so form sugar.

Dr. Rollo conceived the primary disease to be seated in the stomach, and

to be attended with "an alteration in the gastric fluid, producing saccharine matter by a decomposition of the vegetable substances taken in with the food."

It was long objected to any theory which attributed the formation of sugar to a disorder of the digestive processes, that no sugar could be traced in the blood; but this objection is overruled by the improved methods of analysis which have succeeded in finding the sugar. Even in the serum of *healthy* blood, drawn soon after a meal, Dr. Buchanan has found indications of sugar. These facts, together with the one recently published, where diabetic or grape sugar was found in the half-digested chymy contents of the stomach of a diabetic patient, seem to point decidedly to the stomach as the primary seat of the disease.

What, then, is the precise nature of the gastric affection which leads to the formation of grape sugar from some of the articles of diet? In the natural healthy state of the stomach, after the swallowing of food, a certain quantity of fluid is secreted, of which the essential elements are, a certain proportion of free acid and a substance called pepsin: this is the gastric juice, and is the agent in the solution and chymification of the food. Now, so long as these elements remain in just proportion to each other, the natural process of assimilation takes place, the azotised elements still remaining as protein compounds; whilst, under the influence of the pepsin, which seems to act as a species of ferment, the non-azotised elements of the food are converted partly into fatty matter, and such of them as have the hydrogen and oxygen in proper proportion to form water, of which class starch may be considered the type, are most probably resolved into lactic acid, being the simplest transformation they can undergo.

Thus, the formula for starch is $C_{12}H_{22}O_{11}$, and that for lactic acid is $C_3H_5O_3$ (Liebig)—the process consisting only in one atom of starch resolving itself into two atoms of acid. This seems to be the general destination of the farina of the food—the acid unites with free soda, forming lactate of soda, a normal constituent of the chyle, especially in horses which have been fed on grain. (Vide Berzelius). The ordinary cane sugar, taken in with

the food, has an analogous destination, differing only from starch in the presence of one atom of water. It is occasionally also found in the serum of the blood drawn soon after a meal (Buchanan), and contributes to the respiratory process. But in diabetes mellitus the conditions of the stomach and its secretions are materially altered. That it is in a highly irritable state, is proved by the continual hunger which is experienced, and by the great tendency which it evinces to pass into a state bordering on inflammation. In this condition, analogy would suggest that its peculiar secretion would be altered in quantity and quality—increased, and rendered more highly acid. The actual digestion of the enormous quantities of food ingested proves the increased quantity of the acid; and the intensely acid eructations constantly accompanying this disease, with other symptoms, sufficiently indicate the alteration in quality—further proved by the unnaturally acid state of the urine itself, contrary to what might be expected, in a state of the system where rapid disintegration of the tissues is going on, which is generally accompanied by an alkaline state of the urine.

Granting, then, the presence of an unnaturally large quantity of free acid in the gastric fluid, what may its effects be supposed to be on starch and cane sugar, taking these as the type of the non-azotised elements of the food? If the processes in the stomach have any analogy to those in the laboratory, these two substances will each be converted by the fixation of the elements of water into grape sugar ($C_{12}H_{22}O_{11}$), the change into lactic acid being prevented in the stomach, as in the laboratory, by the presence of free acid to a great extent, and subsequently by the further remove in chemical composition which the cane sugar has experienced in its conversion into grape. There are cases, and these by no means infrequent, where an increased quantity of urine of high specific gravity is passed during the time that an irritable state of the stomach exists, and passes away at the same time with the affection of the stomach. A child of about a year and three-quarters old, suffering from dentition, was affected, as is very common, with an irritable stomach, and frequent vo-

miting of very acid matter. At the same time, it was observed to pass a large quantity of water, which had the peculiar smell of diabetes. It was not tested; for in a short time the irritation was removed, and this symptom ceased with the rest. A case to the same effect is related by Morton.

It seems probable, then, that the essence of the disease consists in a disordered state of the mucous membrane of the stomach, leading to excess and over-acidity of secretion, thereby converting the non-azotised elements into grape sugar, which is mixed with the general mass of the blood, excreted by the kidneys as a foreign body, serving as an irritant diuretic, and causing the increased flow of water.

This view of the subject is in strict accordance with the circumstances attendant upon the effects of remedies. Alkaline remedies certainly are not of very apparent benefit; for, besides that the administration of alkalis will not check acid secretion, nor alter the condition of the membrane upon which it depends, the stomach would not bear the quantity which would be necessary to neutralise the acid, and either vomiting would occur, or complete inactivity of digestion. But those remedies which are known to be most beneficial in relieving vascular irritability—as abstraction of blood, counter-irritation, opium, &c.—these are the means found most effectual in checking the formation of sugar. And, in accordance with the same view, an attack of indigestion, or a failure of the appetite, is invariably attended by a diminution in the peculiar symptoms of the disease.

If this be the pathology of the disease, it is necessary to inquire how the constitutional symptoms result from these changes in the nutritive process. The most important, perhaps, of these are, the debility and emaciation, which are such rapid sequences of the first appearance of the disease.

These are generally accounted for rather vaguely by being attributed to the drain on the system, to the conversion of the food indiscriminately into sugar, and, by some, to the resolution of the tissues into the same material. As far as these two latter opinions refer to the azotised elements, either of the food or animal tissues, the improbability will be evident by a compari-

son of the chemical composition of the two types, taking protein and sugar as the representatives.

Protein = $C_{48}, H_{88}, N_8, O_{14}$, (Lieb.)

Sugar (grape) = C_{12}, H_{14}, O_{14} .

But, independently of this, there is evidence of the ordinary changes going on in the protein compounds, by the fact that the azotised excretion, urea, is found in the urine in even greater abundance than in the normal state; a fact in some measure veiled by its greater dilution, and on that account denied by many, but now well known. It is, then, to other causes, than a conversion of the protein compounds into sugar, that we must look for an explanation of these symptoms. According to the generally received views concerning respiration, it is now acknowledged that it is the non-azotised parts of the blood which furnish the fuel, as it may be called, for this species of combustion; and that these, in consequence, are essential to the perfection of the process and the consequent oxygenation, and it may be added, further animalization of certain parts of the blood, for respiration seems to be a great agent in the conversion of the albumen of the blood into fibrine.

In diabetes these non-azotised elements are arranged in an abnormal manner, and apparently unfit for the perfection of the function. Respiration is imperfectly successful in arterializing the blood, and, in accordance with this, the blood when drawn has almost invariably a darker hue than natural; the conversion of the albuminous principles into the fibrinous is likewise imperfect, as shewn by the loose nature of the coagulum of the blood, and its occasional entire want of coagulation. From these causes molecular nutrition must be imperfect; the removal of old tissue still goes on, as evinced by the urea, but its replacement is only partially effected; hence the emaciation and rapidly increasing debility; hence, also, the cold harsh surface of the skin, its dusky hue, the frequent blueness of the lips, the want of energy in the performance of the animal functions, and, lastly, the strange indisposition to exertion owing to the circulation of this imperfect blood in the brain. The disposition

to hæmorrhage from the gums is a further evidence of this state of the blood, and, in more advanced stages, the slow feeble pulse, and the swelling of the ankles and legs.

With regard to the treatment, the first indication is to subdue the functionally excited state of the stomach, and to restore the natural state of secretion. With this view, the topical abstraction of blood, by leeches or otherwise, is an important agent. It is much to be preferred to general bleeding, which has been so much recommended, as the latter reduces so materially the quantity of fibrine, an object to be avoided as much as possible.

Counter-irritation is also very important in reducing this excited state, and has a doubly beneficial operation, inasmuch as by the inflammation excited, a slight increase in the fibrine of the blood is induced.

Of all internal remedies perhaps opium is the most effectual in this disease, by quieting irritation, and causing secretion to take place more slowly and naturally. When this drug purges, as it has been already stated to do, its administration should not be ceased, but its form altered; a very beneficial effect is found from the compound kino powder. Ipecacuanha is frequently given in combination with opium, under the hope of acting on the skin; it generally fails, however, in producing this effect. Kreosote has been much tried of late years, but its effects are much inferior to those of opium; the combination is perhaps superior to either separately. Conjoined with these means, alkalies may be used to subdue the *symptom* of acidity, whilst the other remedies are subduing the *cause*.

Hot and vapour baths are very important agents to restore the function of the skin, not only as regards perspiration, but also those functions which may be considered complementary to that of respiration. To this end they should be used perseveringly and continually, at least daily, but perhaps oftener.

It is the general practice to limit the quantity of fluid ingesta, but this is most probably a needless punishment. The excretion of the sugar is the essence of the disordered function of the kidneys, and the increased flow

of water, and consequent thirst, are only secondary symptoms. The kidneys, irritated by the sugar, require a certain quantity of fluid to carry it off; this must be had from some source, or, if not attainable, increased irritation and probable inflammation of the kidney is the result. Generally the fluid is obtained by absorption from the pulmonary membrane, but it is surely better that it should be taken into the system in the natural way, as it has been shown above that the quantity of ingesta does not determine that of the egesta, nor even bear any constant relation to it.

The employment of animal diet exclusively, proposed by Dr. Rollo, is a very powerful means of lessening the quantity of sugar formed in the system, but there are many circumstances to be noticed in reference to its application. The stomach almost invariably rebels against the exclusive use of this diet, and if persevered in for very long the appetite fails, and nutrition becomes still more imperfect; and this occurs even independently of the very strong disgust felt by the patient at the restriction. Again, non-azotised food being essential to the correct maintenance of the respiratory process, its absence will tend in some degree to disturb the function. The sudden alterations in diet, which these causes necessitate, seem to be productive of great injury. Inflammations also of the stomach and bowels are very apt to occur under this treatment.

Considering these circumstances, and also that our hopes of cure are founded upon removing the cause of those unnatural transformations of the food, rather than the materials which contribute to their formation, it seems advisable to modify the treatment, and only to try the exclusive animal diet with very great caution; or, better still, to allow throughout a moderate quantity of bread, especially made in the way recommended by M. Bouchardat, by abstracting almost all the fecula from the flour, leaving little more than the gluten. By the assiduous employment of these means a cure may sometimes be effected, and, in a great many cases where the diathesis appears ineradicable, such a state of health may be preserved as is compatible with the ordinary avocations of life.

OBSERVATIONS RESPECTING THE
ORIGIN AND GROWTH OF CERTAIN
CONCRETIONS OCCURRING IN
THE PROSTATE GLAND.

By C. HANDFIELD JONES, M.B. Cantab.
Lecturer on Physiology at St. George's
Hospital Medical School.

THE prostate gland is usually described as corresponding in structure to that class of conglomerate glands to which Henle has applied the term "grape-like," and of which the salivary may be properly regarded as the type: this is in the main a correct classification; yet it may not be amiss, before I enter upon the special subject of this communication, to point out one or two particulars in which the prostate manifestly differs from the above-mentioned glands. In the salivary glands, the epithelium which fills their terminal vesicles is bulky, and of very fragile texture, often appearing to consist merely of aggregations of granular matter round nuclei; it differs entirely from that which lines the buccal cavity, which is well known as a perfect specimen of the scaly kind. Now in the prostatic cavities this distinction is not nearly so strongly marked; the whitish fluid, which flows when the gland is compressed into the prostatic sinus of the urethra, consists in great part of epithelial prisms, exactly the same as those of the adjacent portion of the urethra; and in the terminal cavities of the gland, so far as I can determine, the epithelium is still rather allied to the columnar form, than to the spheroidal or truly glandular; sometimes it even approaches closely to the scaly variety, the columns being very short, and the cells imperfectly developed: moreover, in the great majority of instances, it is distinctly seen to line the cavities, and not to fill or occupy them completely, as that of the salivary vesicles does.

Another point of difference appears in the mode in which the terminal cavities of the prostate are disposed, not closely grouped together in lobules, as is the case in the salivary glands, but each for the most part invested, and separated from the adjacent ones by a quantity of connecting tissue: this intermediate tissue is disposed in fasci-

culi, which are closely woven together, and include spaces which are occupied by the glandular structure: it consists principally of the white fibrous element, but also contains numerous bands resembling closely those of organic muscle. In the enlarged prostate of old age this tissue seems especially increased. Again, it may be observed, that in the salivary glands the efferent ducts are narrow, and bear but a small proportionate size to the groups of secreting vesicles which cluster round them on every side; in the prostate the terminal cavities are smaller than the efferent passages, and there is, as before stated, no marked distinction between them. These considerations furnish some ground for regarding the prostate as rather an assemblage of mucous follicles, than really a distinct conglomerate gland: its part in the generative function is probably not to prepare any essential element of the fecundating fluid, but merely an appropriate viscid material, involved in which the seminal animalcules may be more securely transported on their destined route. I now proceed to describe certain remarkable formations, which occur, I believe, solely in this gland.

In the cavities of the prostate there are frequently to be observed a number of minute concretions, having much the appearance, as M. Cruveilhier remarks, of brownish grains of sand; these are easily visible to the unaided eye, but microscopic examination reveals some interesting circumstances relative to their origin and growth, as well as the fact, which would scarcely otherwise have been suspected, that they are almost of constant occurrence; not so often, perhaps, of the brownish-red tinge, which makes them conspicuous amid the whitish glandular structure, but more nearly pale and colourless, yet having in other respects an exactly similar appearance.

In their earliest condition, these concretions appear in the form of a simple vesicle, having a single clearly-defined wall of homogeneous membrane: the cavity is either transparent or occupied by a colourless finely-mottled substance, and in the centre there is seen sometimes a nuclear corpuscle: the size of these varies—I have seen them as large as $\frac{1}{16}$ in. diameter, but the majority are not much above $\frac{1}{32}$

in, and many are still smaller: their form is usually oval or sub-circular. In the next stage of their development, the original dark envelope is still to be seen, while the contained amorphous matter is beginning to be arranged in concentric layers, as indicated by delicate curved lines, which run parallel to the envelope, and are most apparent near to it. As their growth proceeds, they usually attain a larger size; the interior concentric layers become more strongly marked, so as to be scarcely distinguishable, if at all, from the original envelope; their form, also, is frequently altered—in some instances, probably, from mutual pressure, so as to be very exactly triangular or quadrilateral. The central cavity still remains, and generally corresponds pretty accurately to the exterior contour; it contains often a yellowish or reddish-coloured granular material, which is sometimes perfectly opaque: this is not always deposited only in the central cavity, but more or less between the concentric layers, which are sometimes separated by it into two or more series. The size of the concretions when they have attained to what may be considered their mature state, varies considerably; some are quite visible to the naked eye; the majority, however, probably average from $\frac{1}{16}$ to $\frac{1}{8}$ in. diameter. Many varieties may be perceived among them; the concentric layers may be more or less numerous, nearer to the periphery or to the central cavity; they are not unfrequently replaced by radiating stræ, which run for a varying extent outward, and are crossed by one or more concentric rings; the appearance of some of these is extremely beautiful. Sometimes a tolerably large vesicle is seen to contain two smaller ones in its interior, both of which present the concentric laminated arrangement. It is not easy to determine positively whether the stages of growth which have been described as taking place in these structures, are effected by the continual apposition of fresh matter to the outer wall, or by the dilatation of the vesicle, and successive deposits taking place in its interior: both methods are probably employed in various cases; the larger concretions, I think, receive increments of matter on their exterior, while the smaller seem clearly to

increase in the endogenous manner, since the vesicles often attain a large size before the laminated deposit appears, the first faint traces of which may occasionally be seen in process of formation from the granular contents of the vesicle.

When the vesicles have attained their full development, they appear to undergo a kind of degeneration, or more properly, perhaps, to tend to dissolution; they lose their definite contour, become more or less shapeless and irregular; the concentric layers also become less distinct, and the granular contents either totally decolorized, or so much darkened in tint as to appear almost black; many of the larger ones are seen to undergo disintegration by the formation of fissures, which run from the periphery towards the centre, and gradually break up the concretion into smaller fragments. Concretions in all these different states, from their first commencement to their final decay, may be frequently observed in the same gland. The situation which these structures occupy may be easily ascertained, if a thin section taken from the interior of the gland be examined by transmitted light: they are then seen lying in the follicular cavities, either in groups containing numerous small concretions, or as single ones, which are usually of large size: such a view also frequently exhibits multitudes of concretions, colourless or semitransparent, scattered throughout the glandular tissue, which to the naked eye had presented no appearance that could have led to the supposition of their existence. Though I have described the course of development of the original simple vesicles until they attain what appears to be their mature or most perfect state, yet I am by no means satisfied that they are normally destined to pass into such a condition; I think it is very probable that many of them undergo dissolution early, yielding up their granular or amorphous contents to form part of the secretion of the gland, and I am confirmed in this idea by having observed the simple vesicles to be more numerous and constant in their occurrence than those which exhibit the concentric laminated arrangement.

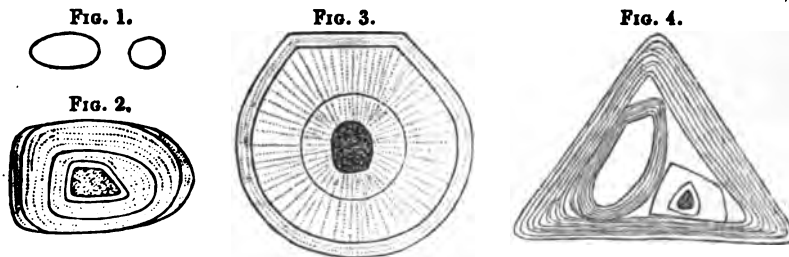
The chemical composition of these concretions must doubtless vary in the

different stages of their development: at first they can scarcely consist of any thing else than animal matter; subsequently, however, they acquire calcareous salts, and, especially when they lose their definite form and degenerate into an amorphous mass, their earthy constituents no doubt predominate. These are stated by Dr. Prout to be phosphate, with a little carbonate of lime. What is the nature of the colouring matter I am unable to state; its presence is evidently not essential: it is unaffected by ether, liquor potassæ, or strong hyd.-chl. acid; its tinge is deepest in those concretions which appear to be of long standing, and to remain permanently in the cavities of the gland.

I have not examined a sufficient number of cases to enable me to offer an opinion as to the causes influencing the production of these formations; only it has appeared to me that they are found so constantly, and in such numbers, in glands which bear no

mark of being diseased, that I am rather inclined to regard them, while in a moderately developed state, as normal structures, contributing, perhaps, some element to the natural secretion of the gland; when, however, they grow immoderately, and assume a permanent existence, they then must doubtless be regarded as diseased products.

One remark, in conclusion, is suggested by the history of these curious formations, viz. that they appear to occupy an intermediate position between organic growths and inorganic concretions: to the former class they belong by having their origin in a vesicle or cell, and by their growth taking place chiefly in the endogenous manner, by successive interior accretions; to the second, they approximate by the triangular or quadrilateral shape which they often assume, their tendency to become infiltrated with earthy matters, and to pass into the state of a dead amorphous mass.



- FIG. 1.—Two primary simple vesicles with homogeneous envelope, and highly refracting contents; their diameters are $\frac{1}{160}$ in. and $\frac{1}{320}$ in. respectively.
- FIG. 2.—A vesicle somewhat advanced in development; several interior layers have formed, between which there are faint concentric strise: the cavity contains yellowish granular matter. Its length is $\frac{1}{160}$ in.; width $\frac{1}{320}$ in.
- FIG. 3.—A large vesicle with three concentric rings, the innermost enclosing the central cavity, which is full of an opaque matter: radiating strise tend outwards from the central cavity to the first of the concentric layers. Diameter $\frac{1}{160}$ in.
- FIG. 4.—A vesicle of well-marked triangular form: its walls consist of several layers; in its interior are two secondary ones, which have also concentric layers. The quadrangular form of the smaller is especially worthy of notice, as indicating that the angular shape is not solely occasioned by their mutual pressure. Diameter $\frac{1}{160}$ in.

CHANGES OF THE YOLK DURING THE DEVELOPMENT OF OVA.

FROM the observations of M. Coste it would appear that the phenomenon of division and subdivision of the yolk, which was first discovered by Prevost and Dumas to attend the development of the ova in frogs, and which has since been observed in mammalia, in certain fishes, and in many invertebrates,

is probably one of general occurrence in all classes of animals. For M. Coste has observed it in birds, scaly reptiles, and cartilaginous fish, in all of which its occurrence has been denied. He noticed, however, that the division and subdivision, instead of taking place over the whole yolk, is limited exclusively to that portion of it which constitutes the cicatrix.—*Comptes Rendus*, 5 Avril, 1847.

CASES OF
MALIGNANT PUERPERAL FEVER,

WITH OBSERVATIONS.

By GEORGE B. CLARK, M.D.

Member of the Royal Colleges of Surgeons of London and Edinburgh, and Surgeon to the Colchester Union House.

Mrs. F., aged 20, of a nervous temperament, living in a small room, badly ventilated, was confined at 5 P.M. on the 8th of May, 1847; labour natural and of short duration; placenta expelled in a few minutes without hæmorrhage. Next day, going on well. — Ordered castor oil, which operated freely. Was sent for at 9 o'clock in the morning of the 10th, when she complained of having had a slight rigor about an hour since; pain in right iliac region slightly increased on pressure; lochial discharge decreased, but otherwise natural; after-pains during the night had been most severe; abdomen tumid, but soft; pulse 96, weak; countenance more pallid than usual, and anxious, evidently suffering from great mental depression, which was increased by the attendants, who, throughout her illness, were too numerous considering the smallness of the apartment, and conversed with her in a desponding manner, contrary to my repeated solicitations. She was then ordered hot fomentations to the abdomen, and a pill containing Calomel, gr. iv.; James' Powder, gr. iij.; and powdered Opium, gr. j., with a febrifuge mixture. In the afternoon, symptoms continuing, a dozen leeches were applied to the abdomen, and to have a pill every four hours containing Calomel, gr. ij.; James' Powder, gr. ij.; Opium, gr. ʒ.

11th. — Passed a restless night; mental depression continues, with quick breathing; clammy perspiration; little or no pain on pressure of the abdomen, which is tumid; no lochial discharge; a feeling of faintness on any attempt to raise her; complains of pain under the left hypochondriac region, extending towards the shoulder; pulse 130, small; tongue furred and dry. To continue pills and mixture, with the addition of gr. ij. of Carbonate of Ammonia to each dose of the latter. Hot bran

poultices to the abdomen. In the evening had been much purged; pulse 130, feeble; to discontinue calomel, and to have Extr. Opii, gr. ij.; Extr. Hyoscyam. gr. j., every four hours. Ol. Terebinth. epethema, covered with hot bran poultices, to the abdomen.

12th. — Has taken five of the pills; purging ceased; other symptoms continuing. — Hydrarg. c. Cretâ, gr. iij. with Extr. Opii, gr. ij. every four hours, and to continue the mixture.

13th. — Slept at times, but wandering and incoherent: towards the afternoon the bowels became much purged; stools of a dark liquid appearance, most offensive, and passing involuntarily; a constant feeling of fainting, and vomits; pulse small and rapid. — To discontinue mercury, and to have a draught of Liq. Opii Sed. ʒss. with Mist. Cretæ Co. and at intervals the following mixture. R Sodæ Bicarb. ʒij.; Ammon. Sesquicarb. ʒij.; Acid. Hydrocyan. ℥xij.; Liq. Opii Sed. ʒss. Tr. Card. Co. ʒiv.; Aquæ, ʒvj. a quarter part when required, with Acid Citr. gr. x. in a state of effervescence.

14th. — Passed a similar night; vomiting continues; pulse 110, improved; purging ceased; tongue more moist. — To continue mixture, and to have a tablespoonful of wine in sago every four hours. *Vespere*. — Continues restless, with constant talking; abdomen tympanitic. — Ordered a turpentine enema, with a draught of Liq. Opii Sed. ℥xv. in aqua.

15th. — Sent for at 4 A.M. Has been for some hours in a violent state of delirium; extremities cold; pulse small and scarcely perceptible. — Ordered Gum. Opii, gr. ij. with application of hot bottles to the extremities, and a glass of hot wine and water every two hours. She became more calm, but continued to sink, and died at 10 P.M.

CASE II. — On the forenoon of the 16th of May, attended Mrs. K., aged 21, a young healthy country woman, living three miles distant in an open heath country. First parturition, which was accomplished shortly after my arrival without anything unusual; child healthy. Visited next day, going on well. — Ordered castor oil. Sent for early in the morning of the 20th, when she complained of a sharp pain in the region of the left hypochondrium, slightly increased on

pressure; pain extending towards the left nipple; tongue furred; pulse 130, most feeble; bowels had been freely opened by oil taken yesterday. States that since she has been in a dripping perspiration, with a feeling of bewilderment, and at 4 A. M. this morning was attacked with the sharp pain above described. Countenance pallid and anxious; restlessness with short breathing; the same feeling of bewilderment; no tenderness over the region of uterus; slight lochial discharge; skin covered with clammy perspiration.—Ordered leeches to the part affected, with hot fomentations to the abdomen. Calomel, gr. vj.; Extr. Opil, gr. iss. ft. pil. to be taken directly, with a febrifuge mixture, containing Tr. Hyoscy. and Liq. Ammon. Acet. every four hours.

21st.—Anxiety and restlessness continue; makes little or no complaint of pain; slight tenderness of abdomen, which is more tumid than usual; extremities cold; pulse feeble and rapid; tongue furred and dark.—Ordered two ounces of port wine every four hours, application of heat to the extremities, with the following medicine. R Calomel, gr. iss.; Pulv. Opil, gr. j.; Confect. Arom. q. s. ft. pil. ter die sumend. R Ol. Terebinth, ʒss.; Pulv. Acacia, ʒj.; Liq. Potassæ, ʒij.; Mist. Camph. ʒv. M. ft. Mist. Two tablespoonfuls to be taken every four hours. Braa pultices to the abdomen.

22d.—Visited by Dr. Chambers, who kindly gave me the aid of his opinion in both cases. Symptoms continue the same; no stool; slight lochial discharge; has passed some dark urine, at times incoherent; has taken the medicine regularly.—Continue the treatment, increasing the quantity of wine. She continued to sink, and died at half-past 9 P. M.

REMARKS.—I made an urgent request for a post-mortem in both cases, which was refused, much to my regret, as an important point is missing in elucidating these two unfortunate and melancholy cases. It is now my duty to relate some more particulars about the origin, and, in the first place, I must confess that I was not aware of the formidable disease I had to encounter in my practice until I was sent for on the morning of the 20th to my second case: true it was, that in

the case of Mrs. F. we had puerperal fever, and her death was registered as such, but I then thought it was fully accounted for from the smallness and bad ventilation of the apartment, accompanied also with the peculiar temperament of my patient; but when the second case occurred, no doubt rested on my mind, that I had not only puerperal fever, but that of the most malignant type, to deal with; and on revolving these cases in my mind, and remembering the connection of erysipelas with this direful disease, it immediately flashed across me that I had been treating, and had then under my care, a most severe case of phlegmonous erysipelas in a sailor, who was brought into the hospital of the Colchester Union House. The disease extended from the hand to the axilla, and was treated by free incisions, aided by nitrate of silver. The man recovered from one of the most severe cases I ever witnessed. The day that I made the incisions, on that afternoon I attended Mrs. F., and I think, however painful for me to feel and relate, there can be little doubt that if no noxious matter was carried, at all events the effluvia remained, and thereby arose this malignant fever. I may only further mention in the history of these cases, as soon as my eyes were opened to what I had to encounter, I hesitated not a moment in ceasing from midwifery practice, and on the death of the second case, I took the opportunity, after arranging about my practice, of taking a sea-voyage to Scotland, to visit some old and valued friends. It has not spread that I am aware of, and I never can be too thankful that at that time I had not my usual run of cases, as I might have attended five or six whilst the case of Mrs. F. was going on, all of which, I have no doubt, would have ended in the same melancholy way.

I would now proceed to make a few practical remarks, as far as the two cases warrant, but would forbear entering at large upon many of the *questiones venata* of this disease,—whether we are to class it in our nosologies as Puerperal Fever, Malignant or otherwise, Inflammation of the Uterus, or Puerperal Peritonitis,—but would refer those who are anxious for information on the subject to the

learned and lucid articles on this disease contained in the *Cyclopaedia of Practical Medicine*, by Dr. Lee; and also that by Dr. Looock, in Tweedie's Library of Practical Medicine, where will be found the opinions of the writers of bygone ages, with the present more advanced state of medicine. Without mentioning the many others who have advanced opinions on this disease, I cannot avoid alluding to the excellent practical papers of Mr. Storrs of Doncaster, and Fisher of Bungay, accompanied as the latter is with the valuable remarks of that talented and excellent practitioner, Mr. Crowfoot of Becclea. The practice of medicine, in all its departments, has of late years been making rapid strides, but to that an exception might be taken to nosology. It has ever and anon occurred to me in practice that a much more correct system of nosology is wanted; it would lead to a more accurate diagnosis and treatment, and to none more so than in the disease before us. We have a constant blending of this malignant fever (if I may so call it) with puerperal peritonitis, common puerperal fever, and its other inflammatory forms. It does appear to me it would be better if it were severed from its companions, and joined to typhus (in its graver forms), Asiatic cholera, and poisoned wounds. Its symptoms certainly resemble the latter more than the former. In the one (puerperal peritonitis) we have the symptoms of *excitement*, in the other more of *collapse*,—in the former we have a fixed acute pain of abdomen, not limited to one spot, dryness of skin, furred tongue, pulse quick and wiry, complete suppression of the lochia, well-marked rigors, and, I might add, yielding to a prompt and vigorous treatment. In a pretty extensive midwifery practice of ten years, I have had frequently to treat peritoneal inflammations, and have found them, without an exception, yield to purgatives and bleeding, general and local, principally the latter, followed up by calomel and opium, until the gums were affected. Now let us turn from this disease to the one before us: we have pallor of countenance, excessive dejection of spirits, great rapidity of pulse, scarcely to be counted; muttering delirium; pain, if much, confined to one spot, but it may almost be said a freedom from pain; indis-

ting rigors; dripping perspirations; slight discharge of lochia; tumid abdomen, with restlessness and anxiety of breathing, not yielding to treatment. In the post-mortem appearances of puerperal peritonitis, we have the peritoneum uniformly red, and often thickened with effusion of serum, with flakes of coagulable lymph: the intestines are distended with flatus, and matted together by patches of lymph. In the malignant puerperal fever, the peritoneum has a dusky hue, unlike the bright florid appearance of acute peritonitis; foetid gas in intestines; the effused fluid has a dirty brown, often bloody appearance; shreds of lymph destitute of firmness, the general appearance being bleached, with little or no vascularity. As authors differ so much in their pathological views of this disease, it is not to be wondered their treatment varies in a like degree. Much is to be accounted for by the fact that they have been treating different diseases, such as puerperal peritonitis and sporadic cases of puerperal fever, in all of which bleeding is highly necessary and successful; but in the malignant cases I have described, I did not use the lancet, and if ever I had the misfortune to be again visited by such a calamity, I must confess I should still pause before using it. I do not say, if I had a number of cases, I would not, as an *experimentum crucis*, use it, even although its success is not so flattering as many of its distinguished advocates would lead us to suppose. I certainly, reasoning theoretically, would feel more inclined to commence with wine, ether, and ammonia; and if I succeeded in rallying the system, trusting to the speedy introduction of mercury, aided perhaps by local bleeding, if required.

From the above, I think the following conclusions might be drawn—1st, that the origin of these cases arose from erysipelas; 2d, a more clear case of the contagious nature of this malignant fever could hardly be well brought forward; 3d, that it is a disease (*per se*) depending on a subtle poison, giving a "shock" to the nervous system; 4th, no treatment hitherto successful; 5th, the absolute necessity of the practitioner ceasing for a time from practice, not trusting, as some recommend, to simple abluion, change

of clothes, the use of chlorides, &c. A heavy moral responsibility rests upon him, and, at whatever personal loss and risk of professional reputation, it ought not to deter him from giving up practice.

Colchester, July 31st, 1847.

MISCELLANEA MEDICA.

By ROBERT DICK, M.D.

[Continued from page 23.]

THE HYGIENIC DUTIES OF MEDICAL MEN. REMARKS ON THE ABUSE OF TOBACCO.

12.—*The Position and Duties of Medical Men.*—It is needless to inform the reader that the nations of earlier and more remote antiquity, the Jews, the Egyptians, the Greeks, and the Romans, were totally unacquainted with the following, among other articles: distilled spirits, tobacco, tea, coffee, and sugar; the latter of which was supplied by honey, &c. Yet the articles just named are now staple in Europe. Vast tracts of the globe, and the labours of vast numbers of men, are occupied in rearing them, or the means of procuring them. Let us confine our observations chiefly to this country. From duties on these articles a large portion of the public revenue is derived, and if government has of late relaxed these duties, it is because it is hoped that a still larger consumption of them will take place, leading, of course, to corresponding returns to the public coffers.

By many persons, both in Parliament and out of it, the articles enumerated above are styled *necessaries* of life: and the statesman or physician who should declare that the use of at least one of them involves gross and indisputable violations of the eternal laws of physiology and hygiene, would probably be viewed as a visionary or enthusiast. This duty devolves more particularly on medical men, whom many circumstances in the times, the state of science and of social necessity, ought to awaken to a more solemn and practical sense of their high and sacred calling of censors and guides of their fellow-men in the RELIGION OF HEALTH (for such I scruple

not to name it), and to cause them to lift their voices against multifarious hygienic and dietetic abuses, instead of, as now, tamely acquiescing in them.

The medical profession should be animated with an *aggressive* spirit. It should not wait till its opinion on grand questions of hygiene is asked by a public often more ignorant than culpable, and too frequently alarmed into inquiry only by pestilence. On the contrary, the medical body should take the *initiative* in such matters,—should recognise that its noblest duty is to prevent rather than cure disease,—that its business is to be constantly remonstrating with Governments and the public in regard to the sins, whether of omission or commission, against hygiene, now permitted, and even encouraged, in this and in every country.

Viewed in this light, how noble appear the functions of the medical man! How vast and how worthy the field for their exercise! How equally benign, innocent, and glorious, the triumphs to be achieved! It has been well said by a German writer that it is to the medical profession that the world must look for the section or solution of the Gordian knot of modern civilization. This remark has reference, of course, more particularly to the prophylactic than to the therapeutical achievements of medical art and science; and, as we have already observed, the prophylactic are the grander of the two, and those which, in proportion to its advance in civilization, Society will call on physic chiefly to attend to.

Physic is truly a noble art; but this remark applies to it rather as it may become, ought to become, will become, than as it ever yet has been exhibited. Hitherto, the grandest names in medicine are those of therapeutists—Hippocrates, Boerhaave; even Sydenham, Cullen, Baillie. Systematic *prophylaxists*, the noblest and most useful labourers in medicine,—or rather, I should say, in physiology practically applied,—are hardly yet known. Prophylactic medicine, as a regular and distinct art, and as a system, is scarcely yet studied, if it is even recognised. Medical men have been hitherto too culpably inattentive or indolent to discover,—too inhu-

mane, and too apathetic, or else too wretchedly sordid, to

" Knock at the gates of nations,"

and, in justice to the Deity, and in mercy to their fellow-creatures, to proclaim, that *nine-tenths of the causes which at present abridge human life, are of man's own making!* I repeat it, the mission,—the hitherto neglected and unfulfilled mission of medical men,—is to thunder, or to drone (which you please) the now-named truth, without ceasing, in the ears of rulers, legislatures, society;—to present it in every conceivable variety of ways before Governments and the public, till these (it may be like the unjust judge of Scripture) yield to importunity that attention to hygiene which they never yet have done, from "fear of God, or regard for man,"—in other words, from policy, duty, or humanity.

We would wish to be allowed to pursue still further these general and preliminary reflections, which we should regret to hear called too speculative and fanciful, and too remote from immediate use or practical application. On the contrary, we hope and expect, that a sketch, somewhat defined, even though prospective, of the reforms, hygienic and physiological, which the growing knowledge of mankind, and even its mere selfishness, will sooner or later inevitably bring about, may induce medical men to propose and undertake, by choice and forethought, those improvements which time, experience, and the necessities and intelligence of society, will otherwise effect independently of them,—though more tardily, and at the expense of much suffering and confusion to the race. Nor are speculative and remote views of good, hygienic as well as others, without their use. By these, in many cases, active enterprise is stimulated and sustained. In the language of sacred writ, men "walk by faith;" and it is often by visions of perfectibility, seen, or supposed by themselves, but invisible to vulgar gazers, that the noblest intellects and spirits have been lured on to attempts which have led to the most essential social ameliorations.

One of the directions of Hippocrates is, that, in treating a case of disease, we ought to consider how far it is of a

divine nature or origin; from which we are to infer that he believed human maladies were, occasionally at least, specially inflicted by the gods, and by their direct agency. I consider it a matter neither of superstition or enthusiasm that we, of the present time, should consider and inquire, how far, placing ourselves in circumstances, or indulging or countenancing any habits injurious to health, be not merely, as it is generally regarded, an injury to ourselves, but also a *sin* against nature,—or, properly to express myself, against nature's Author.

I confess it appears to me that the obligation under which each one of us lies to his Maker, of keeping the *material* frame with which he is endowed, in as perfect order as possible, and in exposing it as little as possible to causes of derangement,—is as obvious as the duty of keeping our intellects clear and vigorous, and our moral sense sound and truthful. It is absurd to suppose that it is less imperative on us to regulate the *bodies* we are trusted with than the *minds*,—that we may resign the reins of the one more than of the other,—that we are at liberty recklessly to trifle with the former more than with the latter. Both are gifts, which, as from the Deity, and connected by him with volition and intelligence in us, are inexpressibly sacred, and involve and impose incalculable responsibility.

Reason itself points out the preservation of health as a religious duty. This is the true light in which to view physiology or hygiene, the light in which it will one day be regarded, and this by persons and ages not only the least fanatical, but, on the contrary, the most refined in intelligence, and the most enlarged in wisdom. This is the view which it behoves physicians, above all others, to take of it and to inculcate, not by medical precept, not in professional prescription only, but by their own practice and by their own example: and this brings me to a new and an important part of my subject.

There are innumerable ways in which medical men might materially advance social improvement and happiness. We know what vast revolutions in religion, politics, manners, for the better or the worse, have been effected by small sects, the members of which

act together, and combine, with their doctrines or theories, practices or rules of life which at once exemplify their own sincerity, and, at the same time, strike the eyes of mankind. In such cases it is not rare to witness a small leaven of sect, leaven to its own views or principles the lump of large communities and nations. Now, what I contend for is, that medical men, acting consistently, and illustrating in practice many things which they preach and recommend *ex cathedra*, might do more to renew and improve society than any other profession or class of men. In competency for this duty, priests themselves, ignorant to a great extent as they are of the laws of physiology, cannot, even for a moment, be compared with physicians. In regard to these matters, indeed, the greatest possible misapprehension prevails.

An instance may be here demanded of a violation of hygiene which is not disapproved of by all physicians, which is practised generally, not only by the public, but by many persons calling themselves temperate: and such an example I shall give.

The use of tobacco, whether considered as a luxury, or, as it is sometimes ridiculously called, a necessary of life, is more extraordinary than that of any other article employed by man. In the form of smoke, it is applied to an organ into which, on all other occasions, liquid or solid food is alone introduced. When used in the solid form, it is equally distinguished as the only substance so applied to an organ destined and adapted to receive æri-form impressions only. In no case but that of tobacco do we *taste vapour* by the *mouth*, and *powder* by the *nostrils*: and in both modes the physiology of the organs is strangely and hurtfully perverted. Even were the smoke or powder of tobacco innocuous, such would still be the case; but it is greatly more so when we consider that this substance is powerfully narcotic; and that, whether used in powder or smoke, whether applied to fauces or nostrils, we bring it in contact with a large extent of mucous membrane of wide and important sympathies.

Here, then, is an example of a habit now almost universally diffused throughout the globe, and practised by nations both savage and civilized; yet undoubtedly a glaring violation of physi-

ology, and unquestionably inimical to the health of man. The all but universal indulgence of this habit, must not blind us to its unnaturalness and perniciousness. It is a perversion of nature; it is a *vice*: it is needless to add that it is not necessary. For thousands of years, mankind, both in savage and in civilized states, lived without tobacco, and they will do so again. The Jews, the Egyptians, the Greeks, the Romans, and Europe till the middle of the 16th century, never heard of it. It will be disused either when the circumstances of mankind compel them to sacrifice superfluities for necessities, or when a finer and wiser sense of pleasure teaches men to find in the healthy tranquillity of their organs, a superior enjoyment to all that the temporary excitement of them by excessive or unnatural stimulants can ever confer.

Although, amid the many other hurtful influences which, by neglect, ignorance, or criminal choice, mankind gather around them, and voluntarily or inadvertently expose themselves to, the evil effects of tobacco are overlooked or under-rated; yet there can be no doubt that it is really a morbid agent, and one which, in various ways, abridges human life.

To the above dissuasions from the use of tobacco, I may add another, which applies also to many other unnecessary articles used by man. While the world is filled with complaints of privation and misery, mysterious and inevitable, it is forgotten how vast a proportion of these evils are not of God's appointment, but of man's making. Thus, putting out of view altogether all the evils flowing from the use of tobacco, after it is reared and prepared, let us reflect on the not inconsiderable amount of human labour, and of the earth's surface, employed, or, properly to speak, *misemployed*, in its production. Millions of money are expended annually in Europe, Asia, and America, on a mode of indulgence unknown and undreamt of until three centuries since. In Scotland alone, according to the computation of the late Rev. Dr. Chalmers, the people lay out £6000 a-year on snuff; and this is probably within the mark!

The duty of medical men in regard to the discouragement of the

use of tobacco, except as a medicine, is very obvious. On social and economical as well as physiological grounds, it ought to be discountenanced by them. It may be said that it is idle to contend against a practice so diffused. But as the extensiveness of an abuse affords not the slightest justification of its continuance, so neither does the hopelessness of our efforts release us from the duty of opposing it. If the public will not conform to the physiological and hygienic truths announced and urged by medical men, it is still less the duty of medical men to connive at the ignorant and pernicious practices of the public.

Bentinck Street, Manchester Square,
Aug. 10, 1847.

ANIMALS WHICH POSSESS AN EPIDIDYMIS.

MM. PAPPENHEIM and Vogt have shown that an epididymis exists in all those vertebrate animals the females of which possess in their oviducts or uterus accessory organs for the production of one or more new tunics for the ovum after its departure from the ovary; and that the absence of those accessory organs in the female is invariably accompanied by absence of the epididymis in the male.—*Comptes Rendus*, 26 Avril, 1847.

RELATION OF NERVE-FIBRES TO GANGLION-CORPUSCLES.

M. WAGNER* appears to have observed what the researches of Dr. Todd and Mr. Bowman† all but proved—namely, that in the ganglia and other nervous centres, the nerve-tubules—or, at least, their central part—pass more or less directly into the nerve-vesicles or ganglion-globules. M. Wagner, whose observations were made on the various ganglia of the skate, torpedo, and other fish, in which the ganglia may be more satisfactorily examined than in higher animals, owing to their possessing but little cellular tissue, states that he has repeatedly been enabled to trace an individual elementary fibre entering a ganglion from a nerve at the side nearest the brain or spinal cord, directly into a ganglion-corpuscle, the nucleus and nucleolus of which were distinctly seen. From another point of the same corpuscle a nerve-fibre passes out again, and goes to join the trunk of the peripheral nerve to its distribution. He observes also that sometimes sympathetic fibres may be seen arising from the ganglion corpuscles.

* In a letter to M. Flourens, *Comptes Rendus*, 10 Mai, 1847.

† *Physiol. Anat. and Phys. of Man*, vol. i. page 214.

MEDICAL GAZETTE.

FRIDAY, AUGUST 20, 1847.

It is not often that our judges interfere to protect medical witnesses from the attacks of counsel. Of course these gentlemen in making the attacks *only* act upon their instructions; although, who the attorney is who gives the instructions, or on what ground he is permitted, when the medical evidence is incontrovertible, to suggest the abuse of honest witnesses, who are compelled by law, *volentes volentes*, to discharge a most painful duty,—are matters which unfortunately never come to light. Whenever the medical evidence, in a case of murder by poison, is particularly clear, a personal attack is made on the witnesses. We are always inclined to think that if, on these occasions, the brief of counsel were examined, it would be found to be endorsed:—“*There is no case for the prisoner—abuse the medical witnesses!*”—It is sad to reflect that not only is no check put upon this unwarrantable license, but that it even sometimes receives encouragement from the judicial bench.

In a trial which took place at Monmouth at the last Lent Assizes, a woman named Thomas was charged with the murder of an infant ten days old, by administering to it sulphuric acid. That the child died from the effects of sulphuric acid, and from no other cause, was, medically speaking, made clear enough. Two medical witnesses capable of forming a judgment on such a case, deposed that the œsophagus, stomach, and intestines of the deceased were distinctly *corroded*, and this corrosion they could attribute to no other cause than the action of a mineral acid. As the child was too

Young to perpetrate suicide, and facts showed that the vitriol could not have got into its stomach by any accident, the only chance for the counsel employed for the defence was to attack the witnesses. The *eschars* produced by the acid, which were found on the lips of the child, were attributed by him to the effect of a sore nipple, of the existence of which no proof was offered; the *corrosion* of the œsophagus, stomach, and intestines, was also, in his view, undoubtedly due to some disease—probably convulsions!

The learned judge who tried this case, MR. JUSTICE MAULE, is reported to have made the following comments on the medical evidence:—

"With reference to the evidence of the medical witnesses, his lordship remarked, it was *generally a matter of conjecture, of guess, which their scientific knowledge enabled them to make*. It was not like the statement of an eyewitness, who might, for instance, see another person on a road. It was rather like seeing their footsteps, or the *vestiges* they might leave behind them, of which a person might form a very strong opinion that they were the footsteps of the certain other person. *It was a matter of opinion, and not a matter of fact*. In this case, then, there were *vestiges* which might have been produced by other substances (?), and not by the poison itself. He had heard that during the last twenty years medical science had made rapid and wonderful advances. So, he dare say, it was said twenty years ago, and so it would undoubtedly be said twenty years hence; and probably the science would never arrive at perfection."

It will be seen that his Lordship does not indicate the nature of the "*other substances*" which might have produced "*the vestiges*" (i. e. chemical corrosion) that gave rise to the medical opinion of death from sulphuric acid! It is not even suggested why or how any "*substance*" capable of producing such "*vestiges*" as were proved to exist in this instance, should find their way

into the œsophagus, stomach, and intestines of an infant only ten days old! We have a great respect for judicial opinions, so long as they are confined to subjects which fall properly within the cognisance of a judge; but here, it will be seen, a very strong opinion is expressed in a matter upon which a knowledge of chemistry, physiology, and pathology, is required. It is not a question of law, but of medicine: hence it is by no means extraordinary that MR. JUSTICE MAULE and Dr. CHRISTISON should be at issue respecting the value of evidence from "*vestiges*." Dr. CHRISTISON says:—

"There cannot be, in my opinion, a rational doubt, that, in the instance of sulphuric acid, there may often be distinct exceptions to the general law regarding the feebleness of the evidence from morbid appearances, and that a witness would certainly be guilty of thwarting the administration of justice, if, relying on general rules, he refused to admit such exceptions. What natural disease could produce appearances like those described above?"*

This question might be fairly put with respect to the appearances found in the body of the child Thomas. We need hardly say, that the woman in this case was acquitted!

It is satisfactory to know that all judges, however, do not treat medical evidence as "*a matter of conjecture or guess*;" and some among them are disposed to protect medical witnesses from the unjust insinuations and personal attacks to which they are often exposed. As an instance of this appreciation of the important services rendered to the criminal law by medical men, we quote part of the charge of CHIEF BARON POLLOCK at the trial of a man named Thompson, which took place recently at Carlisle†.

* Treatise on Poisons, 175.

† A copy of the medical report on the detection of poison in this case will be found at page 124 of the present volume.

"With regard to the remarks upon Dr. R. Elliot: 'It is due to Dr. Elliot—if he is to be believed—to say that he went to the workshops, not for the purpose of inculcating the prisoner, for his own statement is that he went there to get exculpatory evidence, and that he was employed on the merciful and humane errand of seeking something in the prisoner's favour. I do not think it was right to cast upon him the imputation of doing a policeman's work. Every man who believes a person is charged unjustly with an offence may interfere for the purpose of producing evidence that shall clear the accused. If the result is different—if the evidence he gets is of another character—it may be a matter of regret, but certainly it ought not to be cast upon the person as a matter of reproach.' On the analysis, and on Mr. James's strictures on the medical evidence, the Chief Baron said: 'The learned counsel for the defence admitted he was not acquainted with chemistry. I don't know, gentlemen, whether any of you are. Certainly, for myself, I make no profession, except that of carefully taking the evidence, and faithfully stating it to you. If either judge or jurymen were master of chemical analysis, his knowledge ought only to appear through the medium of questions put to the witnesses, or by his being himself sworn. No knowledge which I may possess would be of the slightest use, except to enable me to ask any questions which might have escaped the observation of others. But I think the great questions to a scientific man in a case like this, are—*Are you, as a scientific man, familiar with the means employed to detect such and such a substance? Have you used those means carefully, honestly, and truly? Have you come to a conclusion which you can state beyond reasonable doubt?*' And if a scientific and professional man comes forward and answers these questions in the affirmative, and you are to disregard his answers because arsenic may be found in this ore or that ore, in this substance or in that substance, I must say I know not what safety there is to any of us from day to day. According to the cross-examination of the learned counsel for the defence, and to his address to you, having got out the fact that arsenic is found in various substances, he pro-

poses to account for there being 64 grains of yellow orpiment—yellow sulphuret of arsenic—*without any body being guilty of any offence or crime whatever.* Probably some of you possess a sufficient knowledge of the subject to form some notion *whether the wine-glasses and tumblers you use, or the metallic vessels used for culinary purposes, could by any probability furnish so much arsenic as would form the 64 grains of yellow orpiment found in the stomach and intestines of one person.* The learned advocate may have thought it his duty to speak in a very disparaging tone of scientific witnesses, but it is certainly one of our legal maxims that each person should have credit given to him with respect to the art he practises. We call in a skilful navigator to assist us in judging where the question arises about the proper conduct of a vessel. If a question arises in a medical case—if there is an imputation of negligence or ignorance, we call another medical man to assist us in judging of the good conduct or bad conduct of the party in question. And although it may be quite right to rouse your vigilance by making any comments that may fairly arise, it is for you to judge whether Dr. Robert Elliot did, by his evidence, fairly expose himself to the remarks made by the learned counsel for the defence. I must say, gentlemen, that except for the purpose of correction hereafter, tomorrow or next day, the cross-examination as to the details of any chemical experiments, has, in my judgment, no tendency to enlighten either you or me upon the subject of the result. I am utterly unable to follow them. I can take down the words—I may, from my reading and study, be able to go along with the process described, but neither you nor I can be supposed to possess the requisite scientific knowledge to correct the operation if it is wrong. The circumstance that is to be looked at is this—do you believe the witness is a man of learning, of truth, and of honour, and do you think the conclusion he has arrived at is one on which you can safely rely?"

These observations reflect the greatest credit upon the learned judge who made them. The irony with which the sophistry respecting the alleged

existence of arsenic in iron and glass, was exposed, is worthy of especial notice. Here is enough arsenic found in a dead body to poison outright *twenty grown persons*; and the hopelessly ridiculous defence is taken up, that this arsenic might have come from a few glass-tubes and vessels used in the analysis! Sir Fitzroy Kelly's memorable idea of the gastric distillation of prussic acid from apple-pips, in the well-known case of Tawell, sinks into nothing compared with this attempt to account for the origin of arsenic! We only wonder that such ingenious advocates do not at once adopt the doctrine of the epigenesis of poisons!

One other fact requires comment in this case, because it shows what a perverse interpretation will often be put on the acts of a medical witness, even when they are performed with the honest desire of endeavouring to procure evidence favourable to a prisoner. It appears that in this instance, poison was found in the pockets of the clothes worn by the man, who was a worker in brass. With the humane intention of finding, if possible, exculpatory evidence in his favour, the medical witness went to the shop, procured from the prisoner's work-bench some brass-filings, and submitted them, as well as the metallic dust taken from the pockets of his fellow-workmen, to a careful analysis. No arsenic was found in them. On this act of humanity, the learned counsel (Mr. James) indulges in the comments contained in the following extract from the report of the trial:—

"With regard to the tracing of arsenic to the prisoner, what was more palpable than that it had been obtained amongst particles of dust from the iron amongst which Thompson was working, and which it was admitted might contain that poison? The production of it from the clothes' pockets of the prisoner might, therefore, be perfectly consistent with the innocence of the

prisoner. While commenting on this part of the case, Mr. James remarked upon Dr. R. Elliot's admission that he had gone to Richardson's workshop, and observed that he did not think it proper for a gentleman in the doctor's station of life to discharge the duty of a policeman."

Because the result was not favourable to the prisoner, he was charged with "acting like a policeman," and hunting the man down! Verily, medical men who are called upon to aid justice, are most unfortunately placed. Had the analysis of these brass-filings not been made, we should have had an eloquent denunciation of the conduct of the witness, who, through ignorance or a worse motive, had neglected to ascertain what might have turned out to be a proof of the prisoner's innocence! The judge would probably have reprimanded him for the omission, and have told the jury that, "although arsenic had been found in the man's pockets, yet, so far as the evidence went, it might have been there without implying guilty knowledge. It was his duty to tell them that the prisoner ought to have the benefit of a doubt which the medical evidence had, in this instance, failed to clear up." Whether by omission or commission, even when the acts of a witness are based upon an honest desire to procure the whole truth, he cannot, as it appears, escape a *moral dissection* in a Court of law. Nevertheless, it is a satisfaction to know, from the summing up in this case, that he may occasionally find in the judge, one who is both able and willing to protect him in the discharge of his duty.

ROYAL COLLEGE OF SURGEONS.

GENTLEMEN admitted Members on Friday, Aug. 13, 1847:—A. Godfray.—J. Ross.—R. Muriel.—G. T. Yelloly.—A. Williams.

*Rebélus.**Principles of Physics and Meteorology.*

By J. MULLER, Professor of Physics in the University of Freiburg. With 530 Engravings on Wood, and Two Coloured Plates. 8vo. pp. 565. London: H. Baillière. 1847.

It is not long since that we noticed in this journal the publication of a translation of Peschel's excellent Treatise on Physics*; and we have now before us another work, also by a German author, whose name is favourably known in science. The plan adopted by Muller is simple; it reminds us of the excellent and popular treatise published many years since by Dr. Arnott, but it takes a much wider range of subjects. Like it, all the necessary explanations are given in clear and concise language, without more than an occasional reference to mathematics; and the treatise is most abundantly illustrated with well-executed wood engravings. These, especially in the department of optics, are rendered very effective by the adoption of a new principle in scientific works, *i. e.* by representing the diagrams in white lines on a black ground. The result is most satisfactory, and we think the plan might be profitably adopted by future writers on experimental philosophy.

This work will not suit that section of readers who complain of the "Age of Manual Literature." The author has actually contrived to comprise in 565 pages, including the space occupied by illustrations, Mechanics, the Laws of Motion, Acoustics, Light, Magnetism, Electricity, Galvanism, Electromagnetism, Heat, and Meteorology! The idea of comprising these sciences, including all modern discoveries, in one octavo volume, might be worked out by the "Age of Manual" grumblers, who, we suspect, are the authors of ponderous and unsaleable treatises, as an illustration of the degeneracy of the times. The space here given to so many subjects would not, in their judgment, suffice for optics alone: but, if they choose to forget, we cannot fail to remember the

old saying—*ars longa, vita brevis*. Medical practitioners and students, even if they have the means to procure, have certainly not the time to study, an elaborate treatise on every branch of science; and the question therefore is, simply, whether they are to remain wholly ignorant of such subjects, or to make a profitable use of the labours of those who have the happy art of saying or suggesting much in a small space. This question has been already solved by the profession. Superficial books, which communicate no information, or erudite treatises, which unfold one practical idea in one hundred pages, find neither purchasers nor readers. The former die at once a natural death; while the latter, with the leaves uncut, survive to ornament the shelves of some public library. We are not among those who judge of the value of books by their size, but by their contents; just as we should judge of the value of a course of lectures,—not by the number delivered, but by the practical utility of the subjects brought before the class. All works addressed to medical readers now-a-days, undergo a close literary sifting. No review, however partial or one-sided, can give permanent popularity to an empty work; nor can it, at least for any length of time, prevent the circulation of one which has merit. It is well known that both experiments have often been tried, and, to the credit of the public and profession, they have ended in utter failure.

We have been led into these remarks by the desire to meet an objection, which might, *in limine*, be urged to the very useful volume before us. The intention of the author has been obviously to convey sound information to general readers, whether among the profession or the public. He has not written for mathematical philosophers, or for those whose studies have been entirely devoted to one branch of experimental philosophy, and who are eagerly seeking, upon the publication of every new work, to add to their stock of knowledge. The novelty which this volume offers, is not that of discovery, but of illustration. Simple facts are put before us in a new light, and are illustrated by common events. Turn to a page in physical optics, or acoustics, and one who is already versed in the

* Elements of Physics, by C. F. Peschel: analysed, with Notes, by G. West.

subject may not find so much as he expected; but he will not fail to admit that old facts are made to assume a new and interesting form, by a variety of ingenious illustrations. Further, the paragraphs, although short, are stamped with the great principle of suggestive teaching; minute details are avoided,—the reader must work them out for himself. The explanation of one fact suggests at once the explanation of numerous other facts, not here adverted to, but which, nevertheless, occur to the mind as subjects belonging to the same class of phenomena. This is surely the true art of teaching by books: state a broad principle in plain language,—make a man think for himself:—do not think for him, but supply him with those data which may enable him to judge whether he has or has not arrived at the true solution of a question; and he will rise more instructed and benefited by the perusal of a small octavo, than by poring over pages of speculative reasoning in a ponderous quarto. In the most abstruse sciences, the rules are simple and clear:—all that the student needs, is to have the principles by which these rules are applied, placed clearly before him,—study and reflection will accomplish the rest.

In the work before us, physiological physics are not neglected; and the mode in which the comparative achromatism of the human eye is brought about, as well as the probable means by which this wonderful and living camera obscura adjusts its focus to objects at all distances, are either fully explained, or so investigated as to place the reader at the limits of our knowledge.

From our examination of this volume, we do not hesitate to recommend it to our readers as a useful book on a most interesting branch of science. We may remark that the translation is so well executed, that we think the translator is doing himself injustice by concealing his name.

One hint we must give him respecting a second edition of the volume,—it would be advisable that all weights and measures should be presented in a form intelligible to Englishmen: we do not deny that kilogrammes and decimetres have a strong "decimal" claim on science, but Englishmen will not de-

part from the use of pounds, grains, feet and inches. The custom of centuries is infinitely more powerful with us than the claims of philosophical arithmetic; and it would be just as easy to force the French language upon the population, as this system of weights and measures. One half of the readers of this work will probably not know how to make the requisite conversions, and the other half will certainly not undertake the task. Hence, presuming it to be the desire of a translator that his readers should understand his meaning, it is his duty, if he retains these foreign weights, to place by the side of them, in brackets, the English weights and measures which correspond to them.

Other scientific works, in the same series, are announced for publication, and we shall be glad to find that they are as well selected and executed as the *Physics and Meteorology of Muller*.

A Treatise on the Plague: more especially on the Police Management of that Disease. Illustrated by the plan of operations successfully carried into effect in the late Plague of Corfu; with Hints on Quarantine. By A. WHITE, M.D., Deputy Inspector-General of Military Hospitals, and late Superintendent of the Plague in Corfu, and Fellow of the Royal College of Surgeons in London. 8vo. pp. 342. Churchill, London, 1846.

THE appearance of such a work as this at a period when the subject of quarantine is likely to be submitted to a searching Parliamentary investigation, cannot but be considered as remarkably opportune, maintaining as it does by the most indisputable facts, and the clearest arguments, the essentially contagious character of plague, and the absolute necessity and complete efficiency of strict police regulations in excluding the evil, or in checking its ravages in any situation where it may have chanced to become established. Dr. White's experience of plague appears to have been of the most ample and intimate kind, having been derived from his attendance upon British troops suffering from this disease in Egypt in 1812, and more especially from his observation of that malady during its ravages in Corfu in 1816, when the

Plague District of Lefschimo was placed under his superintendence.

The author is absolutely assured that plague is essentially a contagious disease, communicated solely by contact with an infected person, or with some *fomes* impregnated with the infectious matter; and he adduces plentiful evidence in proof of his conviction that, although its development may be hastened or retarded by atmospheric influences, it is not capable of being propagated otherwise than by contact. In short, he describes the plague as "a disease *sui generis*, depending on specific contagion, and unaltered in its character from the first records which we have of it till the present day: a disease little controllable by medicine, but perfectly obedient to the laws of separation and segregation, absolute non-communication, and purification." An exposition of the system of separating the population of an impestated district, for the purpose of absolutely preventing all communication between the infected and the healthy, occupies the larger portion of this important volume.

The plan adopted by the military and professional authorities during the plague of Corfu, was that of separating and removing from the community three grades of individuals:—1st. Those actually labouring under *positive disease* (plague). 2d. Those of the same family, who one and all were regarded with suspicion, as more liable to be attacked, from their habits of intimacy and actual intercourse with the sick: these the author denominates the class of *high suspicion*. 3d. Those who had had, or were supposed to have had, actual communication with the impestated family: these he denominates the class of *observation*, or those simply suspected. These three classes of individuals were as promptly as possible separated from the rest of the community, and placed severally in encampments, each of which was surrounded by a *cordon* of troops, whose duty it was absolutely to prevent all direct communication between the individuals thus isolated and the population at large. The success which attended this plan, under his own observation, has led the author to recommend its strict adoption in future instances. He confidently asserts, that if a *cordon* is so stationed as effectually to prevent all

intercourse, except under the laws of quarantine, between an impestated place (no matter whether it is a city, town, or district of country), and places which are healthy, and should the persons employed on that service do their duty, he will venture to affirm, that no state of the atmosphere will extend the disease beyond the *cordon*, provided that it has, in the first instance, been so stationed as to have no plague in its rear. Still, however, should the people by any means escape from the impestated place, or should impestated goods be carried beyond its limits, then, indeed, the precaution taken ceases to have its proper effect, and the disease will be propagated in the direct line of the communication.

"In the plague of Corfu, the *cordon*, which was established at Messongie, to prevent all intercourse betwixt the district of Lefschimo and the rest of the island, was completely successful; and, during the whole time it occupied its position, not a single individual, nor a single article of any description, was allowed to pass beyond it from the impestated district, nor even immediately to approach it. The consequence was, that not one case of plague ever occurred in any other part of the island, although the malady was raging in almost all the villages of Lefschimo. If any doubts arise as to the efficiency and use of a *cordon* in plague, I reply at once that both were evidently manifested here; for, if such had not been established and defended with the most jealous attention, there can be no doubt whatever but the malady would have extended itself over the other parts of the island, as it was actually doing over the villages in the interior of the district, according as intercourse between those who were healthy and the impestated took place before the means of cutting them off from one another, and the principles of separation and segregation, were fully acted upon." (p. 45.)

The author meets the objections which might be made to this plan, on the score of personal danger to the secluded individuals, by the following argument:—

"It ought to be impressed upon the minds of the persons under suspicion, whom it is considered necessary to separate from the mass of the people at large, and place in observation, that no real danger can accrue to them from this separation, although I admit that considerable inconveniences may thence frequently occur; and, in fact, things are properly managed, there is danger, provided they are themselves

dent to the laws of quarantine. They may have the plague in their constitution, and this cannot be remedied; but they will not get it in observation if they keep themselves perfectly separated from the others. If they, unfortunately, should have been really impest before they were placed in observation, it cannot be helped. Nothing which we know can prevent its appearing, and it will soon shew itself. If, however, they are free from it when placed in observation, they ought not to contract it there. * * * I would earnestly recommend to the persons, both in *High suspicion* and in *observation*, to have no intercourse beyond the immediate parties who are in the same state of suspicion as themselves; and, indeed, could it possibly be effected, it would be most desirable that every individual be kept separate and altogether apart from the rest during the time. Could this be done, the plague would be instantly checked, and entirely destroyed after its transfer to the places appointed for its reception. There would then be nothing left to feed and support the disease, which would soon die a natural death." (pp. 24-5.)

The following narrative (apart from its prolixity) is a very striking illustration of the necessity of adhering precisely to the system of isolation recommended by the author:—

"It was from a laxity of discipline in this respect that the village of Argirades became impest after it had been a considerable time free from plague. Previously to my taking charge, one of the persons employed in the service of expurgating the houses there, having become very popular among the inhabitants of that village, was in the habit of clandestinely visiting at their houses, the people considering, that, as he appeared to be in perfect health, there was no danger in associating with him. This man had been for some time employed on that duty, and, having hitherto escaped with impunity, he became fearless, and, thinking the usual precautions unnecessary, doubtless, endeavoured to persuade the villagers that there was no reason to be afraid of him, or avoid him, as he had continued the whole time in perfect health. This foolhardy confidence in himself, from his having hitherto escaped the contagion, rendered him careless of his own safety, and consequently less prudent than he had been at the commencement. He contracted, at last, the disease, and died of it: but, what was most to be deplored, he communicated the distemper to all the families with whom he was in the habit of intercourse; so that this mutual violation of the laws of quarantine cost that unfortunate village the loss of many lives before the evil was got under." (p. 40.)

While insisting thus strongly upon the absolute necessity of a strict system of quarantine, the author shows that a very protracted period of separation is not absolutely necessary in the cases of mere suspicion; he thinks it distinctly ascertained, that, with regard to plague, if it is in the system, it will show itself before the expiration of fifteen days. Indeed, he doubts whether it will remain occult so long; and the probability is, it will show itself before eight days if it really exists. "If, therefore," he continues, "a period of fifteen days has elapsed, during which the persons are in the constant habit of purifying all the effects which they have brought with them, and they continue still in health, I would say that, in as far as regards the cause of suspicion, for which they were placed in quarantine, they are safe; and that, if they unfortunately have contracted the malady afterwards, it must have happened from touching some impest person or thing whilst they were in quarantine." The author is not aware of any well-authenticated case of plague occurring after fifteen days from the last contact; indeed, after eight or ten days he considers the person safe; and the knowledge of this fact ought, he thinks, consequently, to shorten the period of quarantine.

Dr. White argues very judiciously against the practice of burning the houses in which plague has occurred, together with the whole of the property which they contain, as he has found that such a measure is unnecessary, and is in itself not sufficient to destroy the contagion, as it leads people to attempt to save what things they are able to secrete from the general wreck, and hoard them in a thousand ways, perhaps fully charged with the contagion of plague, and thus make them the means of future mischief. He recommends that every article of a susceptible nature, however minute, should be removed from every part of the impest house, which is afterwards to be perfectly cleaned, repeatedly whitewashed, fumigated, and ventilated. Care and attention must, of course, be taken in the expurgation of suspected property, capable of receiving and retaining the *fomes* of the plague. Many things, such as linens, laces, cottens, woollen goods, &c. may be purified without their receiving any

damage, by being put into caldrons of hot water and soap for a short time, and then exposed to the air till they are dry. Gold and silver may be sufficiently purified by washing them well in vinegar and hot water. Papers of consequence are to be immersed in clear vinegar and water, and afterwards dried on a wire grating over the fumes of sulphur, or such other fumigating material. This, the author thinks, will be sufficient to dissipate or destroy any contagion which may be attached to them; and if due care is taken in their fumigation, they need not be injured in this process.

The body of this work contains a very circumstantial and interesting account of the plague as it occurred at Corfu in 1816, and of the means which were employed to control its ravages; this narrative is replete with instruction and warning. We attach a very high value to Dr. White's suggestions, and fully coincide with him in all his leading opinions. The subject is one of national interest, and we have nowhere seen it more sensibly, or, we believe, more faithfully illustrated, than in the volume before us.

THE SERUM OF THE BLOOD IN TYPHOID FEVER.

THE serum of the blood in typhoid fever has been examined by Becquerel and Rodier. The patients were 17 in number, viz. 14 men and 3 women; and, altogether, there were 17 first, 6 second, and 2 third bleedings. We shall content ourselves with quoting their conclusions. In regard to its physical properties and chemical composition, the serum of blood first drawn about the commencement of a slight attack of typhus presents conditions very little different from those of health; it is more common, however, to find that, either from the influence of low diet, or from the effect of the disease, the proportion of water is increased, whilst that of its solid constituents, and especially of its albumen, is diminished. When a second bleeding is practised, it is found that, owing to the influence of the first abstraction, to the progress of the disease, or to the effect of diet, or probably to all these three causes combined, the serum has become more abundant and more aqueous, the quantity of solid constituents, and especially of albumen, having diminished. Similar modifications are found to have taken place when the bleeding is practised a third time."—*Dr. Day's Report on Chemistry*, 1847.

Hospital and Infirmary Reports.

CASES TREATED AT THE WESTMINSTER HOSPITAL.

Reported by

HENRY T. L. ROOKE, House-Surgeon.

CASE I.—*Encysted Hydrocele of the Cord* —Operation—Cure.

OLIVER MORTIMER, æt. 46, admitted into the Westminster Hospital, March 23rd, under the care of Mr. Phillips, with a swelling in the upper part of the scrotum.

He states that six months since, whilst at his work, which is that of a day-labourer, the end of one of the boards of a scaffolding struck him on the testicle: it being a cold morning, his scrotum was collapsed, and the testicle retracted: from the effects of the blow, he felt very faint and sick, and was compelled to leave his work.

The following morning, the testicle was much swollen, and there was great pain and tenderness: he had leeches applied, and they gave him relief. After a time, an enlargement in the course of the cord took place, commencing below, and extending upwards.

On his admittance, an oblong tumor was visible, commencing from the testicle, and extending up the inguinal canal: fluctuation was perceptible: a grooved needle having been introduced, serum exuded, and Mr. Phillips pronounced the case to be encysted hydrocele of the cord.

March 25th.—The operation for encysted hydrocele of the cord was performed by Mr. Phillips: an incision was made in the long axis of the tumor, and the different coverings having been divided upon a director, two small superficial sacs were discovered, and there still remained a deeper and much larger one: a piece of each sac was excised, and their interior was stuffed with lint: one small vessel required the ligature.

March 26th.—Inflammatory action has set up: the edges of the wound, and surrounding parts, are somewhat inflamed; his tongue is coated, and he feels feverish. Ordered R. Liq. Ammon. Acet. ʒiiss.; Magnes. Sulph. ʒi.; Aq. Ment. Vir. ʒiiss.; M. cap. ʒi. ter die.

27th.—He feels himself much better; the feverishness is diminished, and the redness around the wound is disappearing; the wound discharges healthy pus: a portion of the lint was removed.

28th.—The remainder of the lint was removed, and fresh inserted; the inflammatory blush has disappeared; the swelling is diminished, and the discharge from the

wound is healthy. From this time all went on favourably; the wound healed, and he was discharged cured.

CASE II.—Medullary Sarcomatous Tumor of the lower third of the leg—Operation—Recovery.

Edward Tuff, *et.* 12, was admitted, February 9th, into St. Mark's ward, with a swelling on the outer side of the lower third of the left leg. He states that four months since, after having struck his ankle, walking some distance, he felt considerable pain of the outer part of the left leg, accompanied with great swelling.

On his admission, there was a large tumor on the outer and lower part of the right leg, obscurely defined, and having an elastic sensation: when pressure was made on it, the veins were seen very distinctly ramifying over its surface: the boy's countenance is pallid and unhealthy: he at present complains of no pain, unless he attempts to use the limb. *R. Hyd. Chlorid gr. ij.; Sacch. Alb. gr. x.; Ol. Ricini, ʒss. cras manesumend.*

Feb. 11th.—The sense of fluctuation in the tumor is more perceptible, and the patient complains of occasional shooting pains. Ordered *Potass. Iodid. ʒss.; Iodini, grs. vj.; Aquæ Destill. ʒss.; M. capt. gtt. x.; ex'cyatho Decoct. Sarsæ ter die.* To have wine and porter.

29th.—His health is improving under the above treatment. A consultation of the medical staff was held this day, and it being decided that the disease was of a malignant character, amputation below the knee was considered to be necessary.

March 6th.—His chest has been examined by the physicians, and they have reported him in a fit state for operation; he has no enlargement of the glands of the groin; it was determined to amputate this day. The ether was administered by means of Mr. Clendon's apparatus, and in a short time the patient was completely under its influence; Mr. Holt then removed the leg by the flap operation. The patient the whole time was perfectly quiet, and seemed quite insensible to pain: three ligatures were applied, the edges of the stump brought together by sutures, and the patient was carried to bed. On recovering from the effects of the ether, he seemed surprised to find that his leg had been removed, and he declared that he felt no pain whatever.

9, P.M.—He says he feels very comfortable; there has been no hæmorrhage; he wishes he could sleep. *R. Liq. Opii Sed. ʒi.; Mist. Camph. ʒi.; M. ft. Haust. st. ad.*

7th.—He has slept very well since he took the opiate; he says the stump is not at all painful; there is no appearance of hæmorrhage; his bowels have not acted; tongue white; pulse 140.

8th.—He complains of the bandage which encircles the stump and lower part of the thigh being very tense: the bandage was immediately loosened, when the knee was discovered to be swollen, and there was a faint blush in the course of the absorbents: he has passed a restless night; bowels have not been opened; tongue furred; pulse 140.

March 9th.—He has passed a restless night, and is evidently not so well; his face is flushed, there is heat of skin, and pain in the stump; his bowels have not acted; tongue furred; pulse 140. *Haust. Purg. ʒi. statim; Enema communis.*

10th.—His bowels have been freely opened by the house medicine and enema; but in other respects he is no better. He has passed a very restless night, the blush and swelling have increased, and he complains of great pain and uneasiness of the stump, which is extremely sensible when touched. A bread and water poultice is to be applied to the stump, to soften the dressings.

On removing the plaister and sutures, there was a slight disposition at the sides of the stump to union by the first intention; very little action in the middle, and a profuse discharge of sanious pus; two strips of plaister were applied, and the stump enveloped in a bread and water poultice. Ordered brandy ʒiv.—Beef-tea.

March 11th.—He has slept about two hours; his tongue is furred, red at the tip and edges, and his face presents an anxious expression; there is a red line extending along the whole course of the absorbents; pulse 140. Ordered hot fomentations to the thigh.

12th.—He says he feels better this morning, although he did not sleep much during the night; the redness is fainter; bowels have acted; pulse 138.

13th.—He is improving; the blush has entirely disappeared; pulse 140, weak and compressible; tongue cleaner and moist. Ordered a mutton-chop. The stump was again dressed, and presented a more healthy appearance.

14th.—He is improving in every respect. Ordered some porter.

15th.—Stump was dressed to-day; it is healing rapidly.

March 18th.—The stump is nearly healed; there is a small sloughing portion in the centre, which is ordered to be touched with nitric acid.

19th.—The nitric acid has brought away the slough, and left a healthy surface beneath. Ordered *Infus. Cinchonæ, ʒvij. ss.; Tinct. Cinchonæ, ʒss.; Acid. Nitric. dil. ʒi; M. ʒj. ter die.*

29th.—Since the last report the stump has quite healed, except at one side, where a sinus has formed, owing to the retention

of one of the ligatures; he is to go into the country for change of air.

April 27th.—He was readmitted this day into the hospital; his health has very much improved, but the sinus shows no disposition to heal; it extends upwards about three inches beneath the skin; it was laid open by Mr. Holt, and stuffed with lint.

29th.—The lint was removed and fresh inserted; there is a discharge of healthy pus. Ordered wine, porter, and mutton-chop.

May 1st.—The sinus is granulating from the bottom.

10th.—Improving; sinus is nearly healed.

14th.—He is quite well, and is to be discharged this day.

CASE III.—*Medullary Sarcomatous Tumor of the Calf of the Leg—amputation above the knee—recovery.*

Mary Williams, æt. 24, a dress-maker, of a pale and unhealthy countenance, admitted, March 21st, into Sanctuary ward, of the Westminster Hospital, under the care of Mr. Lynn, with a swelling on the outer part of the calf of the left leg.

She states that a week before Christmas, on leaving her work to go home to dinner, she felt, for the first time, a shooting pain, extending from the knee to the ankle; the leg began to swell the next day, and the swelling has increased up to the present time. Seven weeks since, she was an in-patient of the hospital; leeches were then applied, and a blister, and by these means the growth of the swelling seems to have been arrested, but the pain was not diminished. Her husband then insisted upon her leaving the hospital, and she remained out a fortnight; at the expiration of that time she was again admitted: the pain and swelling had now greatly increased. Leeches were freely applied, which relieved the pain, and the sense of heat which she experienced was diminished by the application of spirit lotion.

At present there is a large undefined tumor situated at the outer part of the leg, extending half-way down, and continued upwards on the inner side of the popliteal space; the skin is tense and shining, and the veins are very perceptible, ramifying in all directions over the tumor; great tenderness exists in the course of the external peroneal nerve, and there is tenderness, on pressure, over the tibia; there is no affection in the glands of the groin; she says her family are all living, and in the enjoyment of good health.

March 25th.—The pain has much increased,—it prevents her sleeping. Ordered R. Liq. Opil. Sed. ℥xx.; Mist. Camph. ʒi.; M. ft. Haust. omn. sd.

27th.—A consultation of the medical officers took place this day, when the tumor

was pronounced to be of a malignant character, and amputation of the thigh was decided upon.

April 3rd.—This day, at half-past one o'clock, amputation above the knee, by the circular operation, was performed by Mr. Lynn: the patient previously inhaled the ether: she was completely under its influence during the amputation: she exhibited no appearance of suffering during the operation, but talked in a rambling manner. After the operation, an incision was made into the tumor. It presented all the appearances of medullary sarcoma, and on examination of a portion by the microscope caudate cells were visible.

7, P.M.—She is very restless; pulse 140; there has been slight oozing from the stump. Ordered R. Liq. Opil. Sed. ℥xxv.; Mist. Camph. ʒiss.; M. ft. Haust. st. sd.

12, night.—The pain is relieved; feels inclined to sleep.

April 4th.—Her countenance has an anxious sunken appearance; she complains of no pain. Pulse 144, weak; bowels have not acted, and she is unable to empty her bladder; the catheter was passed, and ʒvj. of urine drawn off. Ordered R. Spt. Ammon. Arom. ʒiij.; Tinc. Cardam. Comp. ʒss.; Aquæ Menth. Pip. ʒvss.; M. capt. ʒi. 4tis horis.

11, P.M.—She says she feels better; her countenance has a more lively expression; pulse 134; bowels not open.

April 5th.—She feels herself stronger; pulse 124, fuller; bowels have not acted. Ordered Ol. Ricini, ʒvj. st. sd.; Spt. Vini Gallici; beef-tea; Rep. Haust. Liq. Opil. o. n.

6th.—Her health is still improving; she complains of the stump throbbing; the bandages and straps of plaister were loosened, and a bread and water poultice applied; pulse 120; bowels have acted freely.

12, night.—She complains of much pain and throbbing in the stump; is unable to sleep, and looks exhausted. R. Vini Rubri, ʒiss.; Liq. Opil. Sed. ℥xxv.; M. ft. Haust. st. sd.

April 7th.—She says the draught quite relieved the pain, and that she has slept five or six hours; her countenance is cheerful; pulse 110. The stump was dressed to-day; no union has taken place; the discharge is rather profuse and sanious.

19th.—Stump dressed again to-day; there is great want of action; no union by the first intention; she complains of great throbbing in the stump; her face is pallid; bowels are confined. Ordered Ol. Ricini, ʒvi.; Tinc. Cardam. C. ʒvi.; M. ft. Haust. st. sd.; Vini Rubri, ʒvj.; chop.

10th.—Bowels have been acted upon by Ol. Ricini; her pulse is decreasing in frequency (104) and she has more power.

11th.—The stump was again dressed; granulations are making their appearance. Ordered bottled porter, Oss.; Port wine, 3x. daily.

13th.—She is improving; the granulations are looking healthy; one ligature came away.

15th.—She has passed a good night, and is improving in all respects.

May 8th.—From the last report she has been improving, the discharge from the stump diminishing, and the granulations cicatrizing; the stump is now nearly healed, with the exception of a few of the granulations, which are putting on a glassy appearance, showing evidently a want of power; the stump is very sensitive. Ordered Port wine, 3xij.; Porter, Oj. daily; to ride out for half an hour daily.

10th.—She says she is much better; the pain in the stump is diminishing.

15th.—Granulations healthy and cicatrizing.

June 1st.—The stump is now quite healed; her health is much improved; she is to go into the country to-morrow.

FUNCTIONS OF THE SPINAL ACCESSORY NERVE.

In his late prize essay on the functions of the pneumo-gastric and spinal accessory nerves, M. Bernard again defends the opinion that these two nerves are quite distinct and independent of each other. Moreover, he states that the spinal accessory nerve itself is not single, but composed of two nerves distinct in their origins and in their terminations. In his former paper he showed that the accessory nerve is wholly insensible as regards the lower fibres of its roots—those, namely, which arose from the spinal cord,—whilst its upper roots, which spring from the medulla oblongata, possess a certain amount of sensibility, and that division of them is followed by complete loss of voice,—an effect which does not follow the division of the lower roots. He now observes that these two sets of roots belong to two distinct nerves: that those which spring from the spinal cord go to form exclusively the external branch (as it is now called) of the spinal accessory, and have no connection with the pneumo-gastric; whilst those which arise from the medulla oblongata constitute exclusively the internal branch of the accessory, the whole of which unite with the pneumo-gastric nerve for distribution on the pharynx and larynx. It is by the destruction of this nerve, and of this nerve alone, that loss of voice is produced.—*Comptes Rendus*, 26 Avril, 1847.

Correspondence.

REMOVAL OF A NAIL IMPACTED IN THE PHARYNX.

SIR,—On the 8th inst. I was consulted relative to the treatment of the following case:—

An infant, set, 8 months, whom the mother stated had swallowed a small brass nail, was brought to my surgery, vomiting milk and bloody mucus,—its countenance being swollen and livid. As the vomiting was copious, at first I considered that no treatment could be better adapted to the relief of the case than the encouragement of it. However, from the congested countenance, and the discharge of bloody mucus from the mouth, I inferred that there must be considerable obstruction and penetration in the passage.

These surmises induced me to make a manual examination of the case. The result was the discovery of the enclosed nail, having its point penetrating the mucous membrane of the posterior inferior part of the pharynx, its body extending obliquely downwards, forwards, and across the pharynx; and its two heads being firmly involved in the pharynx.

On the child being supported steadily on its back across the knees of an individual, and by the assistance of another individual keeping the child's mouth freely opened, I was enabled on the introduction of the index finger of my left hand to depress the tongue, to fix and support the nail, and to direct the introduction of a pair of straight long blunted forceps, which I introduced by the other hand, and with difficulty to extract the nail. Its removal from the larynx required forcible traction.*

I think the following practical conclusions may be deduced from this case:—

1. That it is unsafe to trust to the history of a case.
2. That in such cases as the present, it is indispensably necessary to make manual examinations.
3. That in this case, vomiting only could have increased the obstruction.
4. That in this case the introduction of the probang would have been mischievous.
5. That in this case, direct extraction was the only expedient practice.

If you consider the above case calculated to edify the numerous readers of your invaluable journal, by inserting it therein, you will oblige

Yours obediently,
M. D. THOMPSON, M.R.C.S.
L.A.C. London.

Stalybridge, Aug. 9, 1847.

* The nail which our correspondent has forwarded to us is an inch and a half long, sharp pointed; and the brass head forming the button knob is more than half an inch wide.

A SPONGE THE BEST MEANS OF ADMINISTERING ETHER VAPOUR.

SIR,—Ether has been administered at this hospital in six cases by means of a saturated sponge. The first was a little boy, *set.* 3½ years, who had his forearm crushed by a waggon-wheel. Mr. Stanley requested me to try a sponge containing ether, having heard that Mr. Miller, of Edinburgh, had used it successfully in that form. I selected a small piece of sponge which covered the mouth, and poured on it about 3ij. of ether. The child respired easily, and in less than a minute became insensible, when Mr. Stanley amputated above the elbow without the child's being at all conscious of the operation. The next case, a patient of Mr. Lloyd's, was a little boy, *set.* 4 years, with a stone in the bladder. A sponge having ether poured upon it was applied in the same manner as in the last operation. The stone was extracted, and the little patient was carried to bed without having suffered any pain.

A gentleman, with toothache, held a sponge, containing ether, before his mouth for about two minutes and a half, when I extracted his tooth; he had been quite insensible to the operation.

Another gentleman applied the sponge for a like time, when I operated, and with the same happy result.

A third case of tooth extraction, a young woman, of not very delicate appearance, had a sponge placed on her mouth containing half an ounce of ether; in two minutes I extracted the first lower molar on each side. She also had been quite insensible to the operation, and so effectually was she influenced by the ether that insensibility lasted for a quarter of an hour. A woman, *set.* 33 years, a patient of Mr. Wormald's, with disease of the knee, had a sponge applied as in the former cases, and in two minutes and half she became insensible, when Mr. Wormald amputated her thigh; she knew nothing of the operation. I have administered ether in all the operations at this hospital, as well as for the extraction of a large number of teeth, making a total of more than fifteen hundred cases, and I can with safety say that we have never had more successful cases than the six I have just recorded; and I am convinced that persons may be as effectually influenced by a sponge containing ether as by any other apparatus. Having, then, thrown aside the apparatus of my own invention, I think I may be permitted to recommend to the profession a trial of the sponge.—I remain, sir,

Your obedient servant,
S. J. TRACY.

St. Bartholemew's Hospital,
August 18th, 1847.

* * Mr. Tracy will find that this plan of administering ether vapour, was recommended by Mr. S. Tibbs in the early part of the year. See our last volume, p. 612.

HONORARY DEGREE OF DOCTOR OF MEDICINE.

SIR,—I was forcibly struck with the remark in the Edinburgh Medical and Physical Journal of July last, that "the University of New York are in the habit of conferring the honorary degree of Doctor of Medicine on four individuals every year to persons residing within the state, of mature age, and good local reputation." What an excellent model for the London College of Physicians to imitate; what a benefit it would confer on the great body of general practitioners in England, to know that after thirty years' toil and labour there would be a prospect of preferment; how much it would tend to unite the general practitioners to the physicians, and break down that wall of partition which at present separates them, and produces jealousies and envies! And surely a general practitioner who has been successfully engaged for thirty years in combating disease, who has met in consultation with numbers of the most eminent and popular physicians, who has maintained a good character with his medical brethren residing in his immediate neighbourhood, and who has acquired a certain property, the result of his successful labours, would make as good a practical physician as though he possessed all the literature of the schools.

It is not an easy thing for an individual at fifty years of age to commence studying classics, mathematics, &c. &c., all of which are good in early life, but of very little use in a practical point of view. I have been forty years in the profession, and should very much like to take a higher status, and make room for some younger man, but I feel I cannot go to school at my time of life, and to submit to an examination, with the chance of not succeeding, would deter me.

The legal profession has several encouragements before its members, the divines are frequently promoted, but the general practitioners at present are doomed to a life of toil without prospect of rising, unless the College of Physicians should adopt a plan such as is here suggested.—I am, sir,

Your obedient servant,

A GENERAL PRACTITIONER OF MEDICINE,
SURGERY, AND MIDWIFERY, NEAR
FINCHBURY SQUARE, LONDON.

Aug. 10, 1847.

Medical Intelligence.

PAUPER LUNATICS.

A RETURN was ordered on the motion of Viscount Seymour, M.P., in the late Parliament, which shows that the total number of lunatics and idiots (paupers), chargeable to parishes and townships in the several unions of England and Wales, on the 1st of January, 1847, amounted to 18,065, viz., 10,429 lunatics, and 7,636 idiots. 5,142 of these unfortunate persons were maintained in county lunatic asylums and hospitals; 3,761 in licensed houses, and 4,631 in union workhouses; 4,418 were maintained by their friends or elsewhere; 4 of these lunatics and idiots were under 5 years of age; 51 from 5 to 10 years of age; 916 from 10 to 20; 3,504 from 20 to 30; 4,087 from 30 to 40; 3,927 from 40 to 50; 2,903 from 50 to 60; 1,784 from 60 to 70, and 776 upwards of 70; 4,773 were dangerous to themselves or to others, and 2,830 were of most filthy habits.

FRENCH MEDICAL REFORM.

A DISCUSSION has been carried on for some time in France, whether there should be one or two classes of medical practitioners in the new Medical Reform Bill. On Friday the 6th of August, the Faculty of Medicine, by a majority of twelve out of eighteen members present, decided that there should be only one class—i. e. Doctors of Medicine. Those who supported this view were MM. Andral, Berard, Blandin, Bouillaud, Denonvilliers, Fouquier, Gavarret, Marjolin, Orfila, Piorry, Richard, and Rostan.

APOTHECARIES' HALL.

NAMES of gentlemen who passed their examination in the science and practice of medicine, and received certificates to practise, on Thursday, Aug. 12, 1847.—Benjamin Fielding Matthews, Bedford.—Joseph Melton Dempsey, Wilderness Row.—Thomas Green, Grasmere.

August 5.—George Winter Rhodes, Huddersfield.—Jabez Harwood, Sheffield.—Edward Nason, Nuneaton, Warwickshire.—John Edward Ellerton, Aberford, Yorkshire.—John Waddington Hubbard, Leicester.—Walter Dawley Eddowes, Loughborough.—William Daniel Michell, Truro, Cornwall.—Henry Axford Mentell, Farringdon, Berks.

Selections from Journals.

PHYSIOLOGY.

EFFECTS PRODUCED BY THE INJECTION OF VARIOUS SUBSTANCES INTO THE ARTERIES.

BY M. FLOURENS.

THE results obtained by M. Flourens, from his experiments of injecting sulphuric ether into the blood-vessels, have induced this physiologist to pursue his investigations, with the view of determining the effects produced by the injection of other substances into the blood. In these investigations he has found that similar results to those obtained by the injection of sulphuric ether follow the injection of acetic ether, oxalic ether, alcohol, sulphuric acid, and ammonia. These results are:—a manifest—frequently complete—loss of motor power over the muscles of the limb, into the main artery of which the fluid has been injected, together with complete preservation of sensation. Not only is the voluntary power over the limb suspended, but usually also the contractile power itself of the muscles. For example, he found that, after the injection of any of the above-named substances into the left femoral artery of a dog, pinching of the exposed sciatic nerve of the same limb gave rise to no movements of the leg, though it elicited loud cries of agony from the animal. In employing sulphuric acid and ammonia for the injection, these substances were mixed with water: of the former, rather more than two grains diluted with 120 grains of water were used; of the ammonia, four and a half grains, dissolved in about sixty grains of water. The paralysed limbs always remained relaxed, except after the injection of the essence of turpentine, when a condition of violent tetanic rigidity was induced.

Other substances, however, were found, the injection of which destroyed the sensation of the limb, but not the contractile power of its muscles. For example, when the powdered root of belladonna, in the proportion of four grains and a half, suspended in about 270 grains of water, was injected into the femoral artery of a dog (forcing the injection towards the heart), complete loss of sensation in the limb, together with that of voluntary power, resulted. On irritating the exposed sciatic nerve in various ways, no signs of pain were manifested: contraction of the muscular fibres, however, ensued. It is curious that this loss of sensation was not produced by employing the aqueous extract of belladonna instead of the simple powder. Some other, and even harmless, substances besides pow-

dered belladonna produced a like loss of sensation: such, for example, as powder—oak-bark and powdered liquorice-rooted substances, the injurious effects of which, unless dependent on a mechanical action, it is difficult to account for.—*Gaz. des Hôpitaux*, 5 Juin, 1847.

THERAPEUTICS.

ON THE EFFECTS OF EMETICS ON YOUNG SUBJECTS. BY JOHN B. BECK, M.D.

IN some observations on the above subject lately published in the New York Journal of Medicine, the writer remarks that children vomit with greater facility than adults; this he ascribes to the more conical shape of the stomach in children, in consequence of which the contents are more readily forced out. Active and debilitating emetics, the author adds, are often injurious; he alludes especially to antimonial emetics. In the first place, tartar emetic is a powerful sedative, and children do not bear well this class of agents; the following are the author's conclusions:—

1. As a general rule, we need not be afraid of vomiting the youngest child, provided the means used are mild, such as ipecacuanha, &c. The mere act of vomiting is attended with no danger, while the remedial agency of an emetic is one of great power and value; besides acting on the stomach, it extends its influence to the mucous membrane of the pulmonary organs, promoting secretion in the first place, and then aiding in dislodging and ejecting morbid accumulations; accordingly, in pulmonary affections there is nothing so efficacious.

2. The vomiting induced by the preparations of antimony ought to be resorted to with great caution in very young children, and should never be used except in those cases where a sedative effort is required, and can be borne with safety. Inflammatory excitement ought then always to be present to justify its use in a young child; when the object is simply to evacuate the stomach it ought never to be thought of. In such cases as cough and pneumonic inflammation it may be justifiably and beneficially used; in these cases it will be found the system can bear the sedative influence of the article much better than it can in the ordinary conditions of the system; even here, however, care should be taken not to push the article too far, as dangerous collapse has been known sometimes to be the result.

3. The continued use of tartar emetic in young subjects cannot be too strongly guarded against; it is in this way, probably, that it is so apt to prove injurious; a single dose, even though it vomits very freely, may be borne with comparative impunity,

while the repetition of it may keep up nausea and intestinal irritation, so as to induce dangerous prostration. This is very likely to happen in cases of a chronic character, like whooping-cough. Although mild emetics are among our best remedies in this disease, and, where the subject is old enough, a single emetic of antimony is often exceedingly beneficial, yet the repeated use of antimonial emetics, as is too often the case, appears to me to be a great error in practice; it is not indicated by the nature of the symptoms, and violates a great rule which ought always to be observed in the management of chronic cases, and that is, not to break down unnecessarily the strength of the patient.* Again, in ordinary catarrhal affections in children, a good deal of mischief is frequently done by the continued use of expectorant mixtures containing this active article.

4. As the effect of tartar emetic on the system cannot always be measured by its emetic operation, even in the adult, this fact ought to serve as a caution against the too common practice of giving repeated doses of it to produce vomiting in children when they happen to be narcotized. While it fails to vomit, it may still operate as a poison to the system; in all cases of this kind, the proper method of treatment is not to push the emetic, but to endeavour to restore the sensibility of the patient, and then, sometimes, vomiting comes on at once.

5. In using tartar emetic in children, especial regard should be had to their constitutions; in those naturally delicate, and especially where the scrofulous diathesis exists, it should never be used if it can be avoided; prostration is much more apt to ensue in them, and where the article is persisted in for any length of time, it is sure to do harm; it is in such constitutions, when labouring under whooping-cough, and where the use of this article has been too long continued, that the baneful effects of it are most strikingly observed.

6. It is perhaps hardly necessary to say that if tartar emetic be an article of such danger, the younger the subject to whom it is given the more likely it is to do harm; in children under a year, I should say, as a general rule, it ought never to be used; during that period the powers of life are too feeble to bear so active a remedy, at the same time that all the beneficial effects of an emetic may be gained from the use of ipecacuanha, or even milder means.—*Dublin Medical Press*.

* Dr. Armstrong says that it is a most notorious fact that the whooping-cough is far more fatal in London than in the country, and I believe, he adds, that this arises from the very free use of antimonial wine in London.—*Lectures*, p. 248.

STRUCTURE OF THE CONJUNCTIVA.

ACCORDING to Dr. Arlt, who has recently examined the minute anatomy of the conjunctiva in its healthy and diseased state, the transparent portion of this membrane which is extended over the cornea, is composed entirely of layers of pavement-epithelium; no fibro-cellular tissue being discoverable in its structure except at the very borders of the cornea. At these parts the arrangement of the fibro-cellular tissue is such that the simply epithelial portion of the conjunctiva is not round, but has a transversely oval form. In the eyes of old persons, however, and in those of individuals who have suffered much from congestive or inflammatory affections of the conjunctiva, fibro-cellular tissue is frequently developed in the simply epithelial structure covering the cornea; and the result of this is the more or less opaque greyish-white aspect, which the eyes of such persons are apt to present. —*Schmidt's Jahrbücher*, 1847.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Aug. 7.

BIRTHS.	DEATHS.	Av. of 5 Sum.
Males.... 699	Males... 499	Males... 479
Females.. 631	Females.. 499	Females.. 461
1240	998	940

W^{est}—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 361,336) 154

N^{orth}—St. Marylebone; St. Pancras; Islington; Hackney (Pop. 366,303) 184

C^{entral}—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London (Pop. 374,739) 174

E^{ast}—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar (Pop. 393,247) 239

S^{outh}—St. Saviour; St. Olive; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich (Pop. 479,469) 247

Total 998

CAUSES OF DEATH.

ALL CAUSES	Av. of 5 Sum.
SPECIFIED CAUSES.....	998 940
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	311 226
<i>Sporadic Diseases, viz.—</i>	
2. Dropsy, Cancer, &c. of uncertain seat ..	99 108
3. Brain, Spinal Marrow, Nerves, and Senses ..	140 157
4. Lungs and other Organs of Respiration ..	185 226
5. Heart and Bloodvessels ..	26 25
6. Stomach, Liver, and other Organs of Digestion ..	106 94
7. Diseases of the Kidneys, &c. ..	9 8
8. Childbirth, Diseases of the Uterus, &c.	5 10
9. Rheumatism, Diseases of the Bones, Joints, &c.	10 7
10. Skin, Cellular Tissue, &c.	8 2
11. Old Age ..	38 50
12. Violence, Privation, Cold, and Intemperance ..	57 28

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	16	Convulsion.....	41
Measles	46	Bronchitis	24
Scarlatina	16	Pneumonia.....	21
Hooping-cough..	17	Phthisis	118
Typhus	53	Dis. of Lungs, &c.	11
Dropsy.....	3	Teething	10
Sudden deaths ..	4	Dis. Stomach, &c.	15
Hydrocephalus ..	35	Dis. of Liver, &c.	9
Apoplexy.....	16	Childbirth	3
Paralysis.....	19	Dis. of Uterus, &c.	1

REMARKS.—The total number of deaths was 58 above the weekly summer average: an excess chiefly due to the fatality of zymotic diseases. The returns this week present the remarkable coincidence that there was an equal number of deaths in the sexes.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	29.65
“ “ Thermometer	62.6
Self-registering do. max. 106° min. 52.2°	
“ in the Thames water — 72.2 — 67.5	

a From 12 observations daily. b Sun.

RAIN, in inches, 1.03: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 1° above the mean of the month.

NOTICES TO CORRESPONDENTS.

Mr. M. D. Thompson.—We think the explanation answers the purpose without an engraving.

Dr. Robert Elliott (Carlisle) will find some remarks on the subject of his note in the 3d vol. New Series (July 10, 1846), p. 68.

Our correspondent who writes to us in reference to the inquest at Carlisle, will perceive, if he has read a report of the trial, that no “practical chemist” could have gone through the chemical part of the evidence better than the Crown witnesses on this occasion. Analyses are, it is true, often conducted in a slovenly way at coroners’ inquests. No man should, in our opinion, be entrusted with them who, besides having a knowledge of chemistry, was not well acquainted with the properties, doses, and effects of poisons. Courts of law cannot, and will not, afford to subdivide medical evidence in the manner suggested; and, according to our judgment, it is quite unnecessary, and would be highly impolitic to make such a subdivision of duties. A case occurred in France only a few years since, in which “a practical chemist,” entrusted with an analysis, nearly led to the guillotining of a person. It was proved by Orfila, on appeal, that the deceased had died from natural disease, and not from poison.

Mr. H. W. Rumsey.—Any measures tending to the benefit of the sick poor and the medical profession, whether in Ireland or elsewhere, will always receive our support. Men may agree about objects, but differ respecting the means of accomplishing them.

Mr. R. H. A. Hunter’s communication has been received, and will be inserted.

ERRATUM.—In Guy’s Hospital Report, p. 304, col. 1, 26 lines from top, for “it was more full,” read *feeble*.

Lectures.

LECTURES

ON THE

DISEASES OF INFANCY AND
CHILDHOOD,

Delivered at the Middlesex Hospital,

By CHARLES WEST, M.D.

Physician-Accoucheur to, and Lecturer on Midwifery at, the Middlesex Hospital, and Senior Physician to the Royal Infirmary for Children.

LECTURE IX.

Hypertrophy of the brain—usually associated with general disorder of nutrition—symptoms and course—seldom directly fatal—nature of change in brain—alterations in form of skull, and difference from chronic hydrocephalus.—Treatment.—Partial hypertrophy.

Atrophy of the brain—case illustrative of its defective development.—Wasting of the brain in protracted illness.—Temporary retrocession of mental powers in children after long illness.—Case of partial atrophy.

GENTLEMEN,—The anxiety of parents is sometimes needlessly excited in consequence of an infant's head being larger than common, and even though the child's health be good, the relations are apprehensive lest it should be affected with water in the brain. Now you must not be too ready to take up this cry, which is one often raised by nurses and ignorant persons, or to suppose that every large head is therefore unnatural; for one child may have a bigger head than another just as it may have a bigger hand or foot. But it may be that the child's head is not only larger than natural, but that well-marked symptoms of cerebral disturbance are present, and you may feel yourselves compelled to adopt the opinion that the case is one of incipient chronic hydrocephalus. The subsequent history of the patient may in many respects confirm your original diagnosis, so that great will be your surprise, on examining the body after death, at not finding a drop of serum in the ventricles, although, when you opened the skull, the cerebral convolutions had appeared flattened, as if the brain were greatly distended with fluid.

Individual cases of this kind had been mentioned by medical writers at different times, but Laennec* was the first who drew

attention to *hypertrophy of the brain* as a condition resembling chronic hydrocephalus in many of its symptoms, and liable to be mistaken for it. It has since then been frequently noticed, and I am not sure that an undue importance has not sometimes been attached to it, as though it were of much more common occurrence than you will really find it to be in practice.

I have placed upon the table a cast taken from the head of a child who was affected with hypertrophy of the brain, and whose very remarkable case is related by Dr. Watson*. He came under the care of the late Dr. Sweatman when two years old, and his head, which had been gradually increasing from the age of six months, was then so large as, by its weight, to prevent the child from continuing long in the upright posture. The boy was active and lively, though thin. He never had any fit or convulsion, but occasionally seemed uneasy, and would then relieve himself by laying his head upon a chair. He had never squinted, nor was he subject to drowsiness or starting during sleep, and the pupils contracted naturally. His appetite was good, and all the animal functions were well performed. The case was supposed to be one of chronic hydrocephalus, but no urgent symptoms being present, no active remedies were employed. About six months afterwards the child died of inflammation of the chest, and Dr. Sweatman examined the head. It measured 12 inches from ear to ear over the vertex, 13 inches from the superciliary ridges to the occipital, and 21 inches in circumference. The anterior fontanelle, which was quite flat, measured $2\frac{1}{2}$ inches by $1\frac{1}{2}$ across its opposite angles; the posterior fontanelle was completely closed, as was the frontal suture. The skull generally was increased in thickness; the morbid appearances in the membranes of the brain were quite trivial; the ventricles were empty, not dilated; the convolutions were perfectly distinct, and retained their proper rounded shape. The medullary matter, however, presented a very unusual vascularity.

It is not merely on account of the great size which the head attained that I have quoted this history, but because it affords an instance of the overgrowth of the brain unconnected with any general disorder of the processes of nutrition. Such an occurrence is very rare, for hypertrophy of the brain is usually only one manifestation of a deep-seated disorder of the nutritive processes, and is met with in connection with rickets or scrofula, in the narrow lanes of a crowded city, or in the unhealthy valleys of mountainous districts, where goitre and cretinism are endemic.

* Journal de Médecine, Chirurgie, et Pharmacie, 1806, t. xi. p. 669.

XL.—1030. Aug. 27, 1847.

* Lectures, vol. i. p. 413.

The majority of cases of hypertrophy of the brain that have come under my notice in London have occurred in infants about six or eight months old. Their history had usually been, that without any definite illness, they had lost their appetite, and grown by degrees dull and apathetic, though restless and uneasy. Notwithstanding the general apathy, this restlessness is often very considerable, though it does not show itself in cries so much as in a state of general uneasiness, and in frequent startings from sleep. Short gleams of cheerfulness occur when the children are awake, but these are usually very transient. The head seems too heavy to be borne, and even when its size is not much greater than natural, it hangs backwards, or to one side, as if the muscles were too weak to support it. If placed in its cot, a child who is thus affected bores with its occiput in the pillow, while its head is almost constantly in a state of profuse perspiration. Convulsions sometimes occur without any evident cause, but threatenings of their attack are much more frequent than their actual occurrence, the child awaking suddenly with a start and a peculiar cry, like that of spasmodic croup, the surface turning livid, and the respiration becoming difficult for a few moments, and the symptoms then subsiding of their own accord. Such attacks may issue in general convulsions, which may terminate fatally; but infants thus affected do not by any means invariably die of the cerebral disorder, but, being weakly, they are often cut off by the first malady which attacks them.

If life be prolonged, it becomes more and more evident that the process of nutrition is imperfectly performed: the child loses flesh, and looks out of health, and enlargement of the wrists and ankles shews the connection between this disease and rickets,—a connection which becomes more evident in the second and third years of the child's life. When the child survives infancy, or when, as occasionally happens, the symptoms of hypertrophy of the brain do not come on until dentition has been in a great measure accomplished, convulsions are of very rare occurrence. Complaints of headache, however, are frequent and severe; and, though drowsy in the day-time, the child generally rests ill at night, and often awakes crying and alarmed. Besides these symptoms, too, the child has occasional attacks of feverishness, with great increase of the headache, and giddiness, which last for a few hours or a day, and then subside of their own accord, while it grows by degrees more and more dull and listless, and its mental powers become obviously impaired.

It happens in some cases, that, as the child grows older, these symptoms become less and less severe, the health improves,

the rickety deformity of the limbs gradually disappears, and the infant who had excited so much solicitude becomes at length a healthy child. There is a termination in complete idiocy, which I have never seen in this country, but I recently observed some instances of it in the Hospital for Cretins, near Interlachen; and Dr. Guggenbühl, the director of the institution, informed me that the association of cretinism and idiocy with hypertrophy of the brain is by no means of unusual occurrence. Death is not often the direct result of the affection of the brain, but generally takes place owing to the superposition of some other disease. Those affections, however, which prove most fatal are those which favour cerebral congestion, such as hooping-cough, or the eruptive fevers, especially scarlatina.

You must not infer that hypertrophy of the brain has existed in every instance in which the organ may appear to be large, and its convolutions somewhat flattened, although the ventricles are free from fluid. The weight and apparent size of the brain are much influenced by the quantity of blood contained within it, and it may appear too large for the skull, simply because its vessels are over-full.* In true hypertrophy, on the contrary, the brain is generally pale and anæmic, unless death should chance to have taken place as the result of an attack of cerebral congestion. Neither, indeed, is the process one of mere increased growth of the organ, but the nutritive process is modified in character as well as increased in activity. The grey matter of the brain is but little involved in it, and, with the exception of its colour being somewhat paler than natural, it shews scarcely any alteration. The white matter, on the contrary, is both paler and firmer than in a state of health; and Professor Rokitsansky† states, as the result of many microscopic examinations, that its augmented bulk is not produced either by the development of new nervous fibrils, or by the enlargement of those already existing, but by an increase in the intermediate granular matter. These changes, too, do not affect indifferently all parts of the brain, but are confined to the hemispheres, implicating neither the base of the organ nor the cerebellum.

Chronic hydrocephalus is the only affection with which hypertrophy of the brain is liable to be confounded. The diagnosis between the two affections is often by no means easy, though it is of much importance with reference both to our prognosis and our treatment, for we should have more

* See Mauthner's elaborate tables of the weight of the brain under various circumstances, lib. cit. Sect. V.

† Lib. cit., vol. ii. p. 771.

hope of the recovery of a child whose brain is merely hypertrophied than of one whose brain is distended with fluid, while the means by which we should endeavour to effect a cure would differ widely in the two cases. The history of the patient would afford some help towards determining this question, for the symptoms of chronic hydrocephalus generally come on earlier, and soon grow much more serious, than those of hypertrophy of the brain, and the cerebral disturbance is throughout much more marked in cases of the former than in those of the latter kind. The form and size of the head, too, present peculiarities by which you may often be enabled to distinguish between the two conditions. Both diseases are attended by enlargement of the head, and in both the ossification of the skull is very tardy, but the head does not attain so large a size in hypertrophy of the brain as in chronic hydrocephalus, neither are the fontanelles and sutures so widely open. The skull, likewise, presents some peculiarities in form which are so remarkable as to have attracted the attention of several observers, though I must own that I do not thoroughly understand how they are produced. The head not merely shews no tendency to assume the rounded form characteristic of chronic hydrocephalus, but its enlargement is first apparent at the occiput, and the bulging of the hind head continues throughout especially striking. The forehead may, in the course of time, become prominent and overhanging, but the eye remains deep sunk in its socket, for no change takes place in the direction of the orbital plates such as is produced by the pressure of fluid within the brain, and which gives to the eye that unnatural prominence, and that peculiar downward direction, which are so striking in cases of chronic hydrocephalus. In hydrocephalus the anterior fontanelle is tense and prominent, owing to the pressure of the fluid within, but when the brain is hypertrophied there is no prominence, but an actual depression in this situation. I have more than once observed this condition in a very remarkable degree, the depression not being limited to the anterior fontanelle, but being observable at all the sutures; and you may notice something of the kind in this cast.

When hypertrophy of the brain occurs in the adult, the symptoms that arise are in great measure due to the compression which the organ undergoes from its bony case being too small to contain it. These symptoms are of course obscure, while, even if the nature of the affection could be recognised, its cure must be hopeless. In the infant, however, and the child whose head is incompletely ossified, the immediate consequences of the evil are far less serious,

while some benefit may be expected from the judicious employment of remedies, since over-development of the brain in childhood is almost always associated with general disorder of the processes of growth and nutrition. We are not, indeed, acquainted with any means by which we can directly check the morbid increase of the brain, but all our efforts should be turned towards improving the general health, while we interfere directly with the cerebral symptoms only in so far as their urgency may render it absolutely necessary. The child therefore must not be dosed with calomel merely because its head is affected, though the deficient secretion of bile may often render the employment of small doses of mercurials necessary. Similar restrictions would apply to depletion, for we have seen that the hypertrophied brain is characterised by a want of blood rather than by its superabundance, but nevertheless occasional attacks of cerebral congestion may render local depletion necessary, and the exacerbations of headache, with vertigo and fever, will, if severe, be often benefited by its employment. I have now and then tried counter-irritation by means of the tartar emetic ointment rubbed into the back of the neck, with much relief to the head symptoms, in the case of children who were suffering from the indications of hypertrophy of the brain, but I should fear to have recourse to this measure in infants. In them, indeed, one of our first efforts must be to relieve the brain from the constant irritation to which it is exposed when the child is in the recumbent posture, and the head rests on the yielding and imperfectly ossified occiput. For this purpose we cannot do better than follow the suggestion of a German physician, Dr. Elsässer,* and have a small horsehair cushion prepared for the child's head to rest on, a piece being cut out of it large enough to receive the occiput. In cases both of hypertrophy of the brain and of chronic hydrocephalus, I have seen the adoption of this simple contrivance followed by almost immediate cessation of the rotatory movement of the head, and by quiet sleep in its cot, to which perhaps for weeks before the child had been a stranger.

It is not desirable that a child who suffers from this affection should sleep entirely without covering to the head. The profuse perspiration of the head is more effectually checked by a thin linen cap which may be changed once or twice in the night, while at the same time the child is saved from the danger of catching cold.

While these hygienic proceedings which have especial reference to the head are at-

* *Der weiche Hinterkopf*, vvo. Stuttgart, 1848, p. 205.

tended to, the child should be daily sponged with salt and water, or with sea water if it were possible to remove it to some place on the coast, such as Brighton; or it would probably be benefited by immersion in a tan-bath, in which it should remain for several minutes.*

The remedies under the continued use of which I have seen the most good result are the extract of bark, from which you might pass to the preparations of iron—such as the *Vinum Ferri*, or that very elegant syrup of the *Ferro-citrate of Quinine*, prepared by Mr. Bullock of Conduit Street. I have not made much trial of the iodide of potassium, since in all the cases that I have seen some more decided tonic appeared necessary. I have, however, given the syrup of the iodide of iron sometimes with advantage, and, in cases where the tendency to rickets was well marked, I have observed a most decided improvement follow the use of the cod-liver oil, in doses of a drachm twice a day for a child of three years old. I may just mention, that, notwithstanding its nauseous taste, this medicine is usually readily taken by children, some of whom even become fond of it.

With reference to diet, it will probably be desirable, if the child be not weaned, to obtain for it a healthy wet nurse, while, after weaning, a diet of milk, with an egg once or twice daily, will often agree better than any other food. In cases of this kind, and, indeed, in all where the digestive powers are feeble, a preponderance of farinaceous food is not desirable, while the child may with safety be allowed a little veal-broth or beef-tea daily, or even a little meat if it have cut some of its molar teeth.

Cases of *partial hypertrophy* of the brain are on record, in which one hemisphere alone was affected, or in which some one or more of the central parts of the brain greatly exceeded the natural size, whilst the rest of the organ deviated in no respect from its normal condition. An instance of the kind you see represented in this drawing of Dr. Mauthner's†, in which the right optic thalamus was as large as a hen's-egg in a girl of 3 years old. In cases of this sort sometimes no symptoms are present, and the anomaly is only accidentally discovered after death; whilst in others, although there are indications of

cerebral disturbance, yet they are not such as to enable us to determine the nature of the evil of which they are the expression.

There is a condition of the brain the direct opposite of that which we have been examining, in which the organ falls below the natural size, or in which *atrophy of the brain* exists. I do not refer here to those cases where the brain is imperfectly formed, the head exceedingly small, and the child idiotic from birth, but this microcephalus appears sometimes to come on afterwards, owing probably, as has been suggested, to premature closure of the fontanelles and sutures. Such a case I saw several years ago, when a woman brought to me her boy, who was three years old, the elder of two children of perfectly healthy parents, none of whose relatives had ever shown any sign of consumption, idiocy, or mental derangement. When born, this boy was perfectly well formed, neither did he present any peculiarity till he was six months old, when his mother began to observe that he did not look any one in the face, and that he seemed to take but little notice of anything. When eight months old, he began to have fits, which had since returned about once a week, being preceded by extreme restlessness for a day or two. The fits lasted for a quarter of an hour; they were attended by convulsive movements of both sides, and followed by drowsiness, which continued for some days. The child ate and drank, though not heartily, and he never seemed anxious for food. He did not distinguish between what was nice and what was nasty, swallowing all things with the same readiness, though deglutition appeared to be difficultly performed. He had cut all his teeth, he seemed tolerably well nourished, and his body and limbs were well formed. He was, however, quite unable to stand; he passed his urine and feces under him without appearing to take the slightest notice of it, and he seemed destitute of every glimmering of understanding. His mother said that his head was smaller than that of her infant which was only six months old. It measured 17 inches in circumference around the parietal protuberances, and 11 inches across the head from the centre of the meatus of one ear to the same point on the opposite side. The forehead was extremely narrow, and the head shelved upwards quite in a sugar-loaf shape. All the sutures and fontanelles were firmly ossified, but I have unfortunately omitted to record at what age they became so. I never saw this boy again, but two or three similar cases have since come under my notice. I have nothing more to say about them, for their cure is manifestly quite hopeless, and, therefore, though they may interest us as pathologists,

* The tan-bath, which I have employed with very marked benefit in the case of weakly and rickety children among the poor, is prepared, as directed, by Dr. Elsässer, by boiling three handfuls of bruised oak bark, tied up in a linen bag in three quarts of water for half an hour, and adding the decoction to the water of the child's bath. These baths should be employed tepid, and their use should be continued every day for several weeks.

† Lib. cit. Plate I., and page 189.

they scarcely concern us as practical physicians.

Of much higher practical importance are those instances in which the brain of children wastes during long-continued illness. The scalp, in such cases, will usually be found bloodless, the fontanelles collapsed, and the process of ossification will be seen to have been unusually tardy. Fluid will be found within the sac of the arachnoid, and effused into the subjacent pia mater. The brain will be far from filling up the cavity of the skull, so that a knife may be passed in many places between it and the cranial walls. The sulci between the convolutions appear unusually deep, and fluid will be found both at the base of the brain and in the ventricles, as well as in the pia mater. The cerebral substance is pale, and its texture firmer than usual.

The important point about such cases is, that cerebral symptoms and frequently recurring convulsions may be observed in a child whose brain is nevertheless not diseased, but too feeble and too wasted to perform its functions. If, then, you find indications of cerebral disturbance come on in infants who have been exhausted and emaciated by previous illness, you must not interpose too hastily with remedies directed against a supposed disease of the brain, but bethink you whether these symptoms may not be merely the signs of the brain having become unequal to its duties from its having been imperfectly nourished, and do not, without consideration, abandon the tonic plan of treatment which you had been previously pursuing.

It is only in infants that accidents of this grave nature are likely to ensue, from the imperfect nutrition of the brain consequent on protracted illness, but symptoms arise in older children under similar circumstances well calculated to excite the apprehension of parents. In children who had but lately learned to talk I have sometimes known loss of speech follow a long illness, the child being too weak to talk, just for the same reason as it is too weak to walk. Sometimes, however, the child apparently regains its previous health, and yet makes no efforts to articulate, even for two or three months. In cases of this kind I have seen parents thrown into great anxiety from the fear lest the child's continued silence should be the result of the intellect having become impaired during its illness. I imagine that in many of these cases the child has forgotten during its illness much of its newly-acquired knowledge, and that it is some time before it again feels equal to the mental effort of shaping its ideas into words. Usually, however, when it begins to make the effort, it recovers its speech rapidly, and

you may therefore console the parents with this prospect.

Even a manifest retrocession of the intellectual endowments should not be regarded with too much anxiety, when it has followed some long-continued disease, for it may be the result of mere weakness; the vacant look, the unmeaning laugh, and the silly manner, gradually disappearing as the child gains strength. The brain seems to regain its lower powers, and to perform its humbler functions, before it resumes its nobler office as the organ of the mind.

Partial Atrophy, like partial hypertrophy of the brain, may occur we know not why, and may be discovered, after death, where the existence of cerebral disease had never been suspected; or we may find the explanation of a number of anomalous symptoms, which had existed during life, in a wasted condition of some portion of the organ. This state may be the result of original conformation, or it may come on as the result of disease, in which latter case the substance of the wasted portion of the brain usually found to be much firmer than natural. We are greatly in the dark as to the nature of the process by which this change is effected, but it is thought in some cases to be the remote consequence of hæmorrhage into the cerebral substance, and in others, to be induced by a slow kind of inflammation. One case of this kind has come under my own notice, which, for its rarity, I will relate to you.

The patient was a little girl, aged 3 years and 10 months, the child of phthisical parents, but whose health, though delicate, had never been interrupted by any serious illness until she had an attack of remittent fever in the early part of the spring of 1845: she recovered from it without any bad symptom, and seemed doing pretty well for about a month, when she became sleepy and heavy, and feverish, for which symptoms she was brought to me on May 19th. After being under a mild antiphlogistic treatment for a week, she got better, and was beginning to walk about again, when she awoke one morning with her face drawn to one side,—a condition, however, which did not continue. When she attempted to walk, however, it was noticed that she halted very much on her left leg, and that it sometimes gave way under her, so that she fell down on that side, and then turned round upon her back. She had, besides, but little power with her left hand and arm, so that she could not grasp any thing firmly, nor hold it steadily. The child's bowels were at that time constipated: I purged her freely, and sent her into the country, whence she returned in the beginning of August, much improved in every

respect, though still limping a little with the left leg, and using her right arm in preference to her left. At the end of September I saw her again, she having then a bad impetiginous eruption on the scalp, which was treated with warm poultices and water-dressing, when, on October 6th, she began to limp with her right leg, just as she had previously done with her left; though in other respects she continued pretty well. On October 17th, the affection of the right leg was a good deal less marked, but the child now became unwilling to walk, often turning giddy, and always catching hold of something by which to steady herself. When attempting to walk, she often fell down into a sitting posture; and would then sit on the floor, laughing loudly. Fits of uncontrollable laughter often came on without any cause, and the face began to assume an idiotic expression. There was occasional slight inward strabismus with both eyes, but the pulse was soft and undisturbed; the bowels were regular, and the evacuations natural, and the child rested well at night, though her head was often rather hot. A week afterwards there was no new symptom, except that the child kept her neck quite stiff, as though she feared to move it; her head grew hotter, and she began to have a frequent teasing cough, while her power of walking varied almost every day; she now, too, grew more restless at night. On the morning of the 27th, frequent convulsive twitches of the muscles of the face and extremities came on, and the left eye became permanently turned inwards. She had no sleep in the night; general convulsions came on at 8, A.M. on the 28th, and she died convulsed two hours afterwards.

I found some deposit of tubercle in the bronchial glands, but none in the brain, where I had expected to discover it. The left hemisphere of the cerebellum, however, was, as you see both in this drawing and in the preparation itself, fully a third smaller than the right: it was of extremely firm consistence, quite leathery, and on making a section of it its surface presented a rose tint. The halves of the pons and medulla oblongata were of equal size, as were the two hemispheres of the cerebrum. It was evident, too, that this condition was not congenital, since the two halves of the skull were of equal size, and the elevations and depressions in the interior of its base were precisely the same on both sides. There was a little fluid at the base of the brain, but none in the ventricles; a state of general congestion of the brain and its membranes being the only other remarkable appearances.

The spinal cord could not be examined.

There was no trace of any old effusion of

blood in the substance of the cerebellum, though the symptoms that occurred in May, and the subsequent gradual improvement of the patient, are not easily explicable on any other supposition than that hæmorrhage had at that time taken place into the substance of the brain. The history of the case presents another difficulty, in the circumstance that the disease was seated on the same side as that to which the symptoms had been chiefly referred. Another problem which I cannot pretend to solve is, why the paralysis should in the first instance have affected the left side, while, on the occurrence of the relapse in October, the right leg was palsied. I must therefore content myself with the bare relation of this history.

ON

CHEMISTRY AND THE MICROSCOPE

IN RELATION TO

PRACTICAL MEDICINE.

By GEORGE E. DAY, M.A. & L.M. Cantab.

Member of the Royal College of Physicians,
Lecturer on Animal Chemistry and Histology
at the Middlesex Hospital School, and Physician
to the Western General Dispensary.

LECTURE II.

Qualitative analysis of the constituents of the ash left on the incineration of animal solids and fluids.

Organic constituents of the body—Protein—how obtained—state in which sulphur exists in it—its formula—The oxides of protein—the general distribution, and uses of protein in the organism—Albumen—Fibrin—Casein—Globulin.

IN my last lecture I stated that I should give you a few simple rules for the qualitative analysis of the substances of which we had then been treating. Occasionally, as in the case of the urine, we are able to determine by the direct application of the proper tests whether certain salts are present, but in most instances, as in the albuminous fluids, the various solids, &c., it is requisite to obtain a saline residue by incineration before we can proceed to determine the nature of the salts that are present. There are three objections to the process of incineration—in the first place, all volatile (ammoniacal) salts are expelled; secondly, sulphuric and phosphoric acids are often produced by the oxidation of sulphur and phosphorus, and combining with bases augment the sulphates and phosphates to an undue degree; and, thirdly, many salts undergo decomposition, react on each other, and form new products.

We will assume that you have obtained a well-decarbonized ash. The substances for

which you are going to search are carbonic acid, chlorine, sulphuric and phosphoric acids, soda, potash, lime, magnesia, peroxide of iron, silica, and fluoride of calcium.

By treating the ash with distilled water till it ceases to take up any more saline matter, we obtain (1) the soluble, and (2) the insoluble portion.*

We will first consider the salts dissolved in the distilled water:—

(1.) *Soluble portion of the ash.*

To test for acids, we concentrate and add dilute nitric acid.

(a.) An effervescence indicates the presence of *carbonic acid*.

(b.) If, on adding a solution of nitrate of silver, there is a white precipitate, it is an indication that *chlorine* is present.

(c.) If, on testing a portion of the solution with chloride of barium and nitric acid, there is a white precipitate, we have proof of the existence of *sulphuric acid*.

(d.) To look for *phosphoric acid*, we slightly acidulate with hydrochloric acid, add a drop or two of a solution of sesquichloride of iron, and an excess of acetate of potash; a flocculent precipitate of phosphate of iron is precipitated, if phosphoric acid is present.

To test for *bases*, we add a little hydrochloric acid and water, and concentrate the solution.

(a.) For *potash*, we test with bichloride of platinum, or with tartaric acid.

(b.) We detect the presence of *soda* by placing a small portion of the dried residue before the blow-pipe. Soda communicates a yellow tint to the inner flame.

(c.) To detect *lime* and *magnesia*, we treat the acid solution with muriate of ammonia, and then render it very slightly alkaline by ammonia; oxalate of ammonia will precipitate the lime as an oxalate. If we then filter, and boil the filtrate with carbonate of soda, carbonate of magnesia will be thrown down.

(2.) *Insoluble portion of the ash.*

The rules we have already given will enable us to detect the presence of carbonic, sulphuric, and phosphoric acids, and of lime and magnesia.

(a.) *Per-oxide of iron* is present, if, on the addition of ferrocyanide of potassium to an acid solution, we have a blue precipitate.

(b.) *Silica* is present, when, after the whole of the carbonaceous matter has been burnt off, there remains a residue insoluble in hot concentrated hydrochloric acid.

(c.) *Fluoride of calcium* is best detected in the following manner:—The insoluble residue supposed to contain it must be placed in a platinum crucible, moistened with strong sulphuric acid, covered with a

square of waxed plate-glass, with characters traced through the wax, and gently warmed. If fluoride of calcium is present, the liberated hydrofluoric acid corrodes the exposed lines on the waxen plate. In performing this experiment, it is expedient to raise a wall of wax on the edges of the upper side of the glass, so as to retain a portion of water sufficient to keep the plate cool, and condense the hydrofluoric acid on it.

For further information on the means of analysing the saline residue of animal fluids and solids, I must refer you to the systematic works of Rosé, Fresenius, and Parnel; to a brief paper by Simon, "On the Determination of the different Salts usually occurring in Zoo-Chemical Analyses," published in 1844, in his "Berträge zur physiologischen und pathologischen Chemie und Mikroskopie;" and to Hoffmann's "Grundlinien der physiologischen und pathologischen Chemie," p. 80-89.

We now proceed to the *organic constituents* of the body; and I think that the most philosophical mode of arrangement would be to divide them into three groups:—the first embracing the substances essentially constituting the body,—as, for instance, albumen, fibrin, fat, &c.; the second, the essential constituents of the secretion,—as, for instance, sugar of milk, bilin, &c.; and thirdly, those substances which occur in the excretions, as urea, cystin, and oxalic acid. Such an arrangement, however, presents this practical difficulty,—that we should have to separate substances closely allied in their chemical characters: thus sugar of milk and lactic acid would belong to one group, while diabetic sugar and acetic acid would be found in another. I shall therefore adopt the same plan that I have done in the Introduction to Simon's Chemistry, and divide them into nitrogenous and non-nitrogenous substances.

I shall commence, then, with *protein* and *protein-compounds*.

Protein is the name applied by Mulder to a substance which he regards as the starting point and commencement of all the tissues, and of which albumen, fibrine, and casein, are now usually regarded as nothing more than modifications.

The following remarks are taken almost entirely from the writings of its discoverer, Mulder:—In both plants and animals a substance is contained which is produced within the former, and is imparted through their food to the latter; and in both of which its uses are innumerable. It consists solely of carbon, hydrogen, nitrogen, and oxygen, but is a most complicated substance, and is a source of innumerable chemical transformations within the animal body. It is unquestionably the most important of all known substances in the organic kingdom;

without it life seems impossible on our planet, and through its means the chief phenomena of life are produced.

It is present in all parts of plants, in roots, stems, leaves, fruits, and in their several saps; and in the animal body we find it in very different parts, and existing in various forms, being either soluble or insoluble in water. It forms different compounds with sulphur and phosphorus, or both, and hence it presents differences in appearance and physical characters. It has received the name of *protein*, because it is the origin of many dissimilar bodies, and is itself a primary substance. In the animal body it is the chief constituent of the blood, the muscles, and many other parts. Whether it is formed within the animal body, or whether it is formed in plants alone, and thus imparted to animals, has not yet been ascertained. It has recently been a subject of dispute between Mulder and Liebig, whether protein is composed simply of carbon, hydrogen, nitrogen, and oxygen, as the former asserts, or whether it also contains sulphur. Mulder gives the following method for obtaining it:—

Take a potash-ley containing $\frac{1}{10}$ th of potash, mix it with coagulated albumen previously washed with water, so as to cause it to dissolve speedily, and let the whole remain upon the sand-bath at a temperature of 140° — 176° Fah. until the reaction of the sulphur existing in the albumen ceases to increase. Let the liquid remain exposed to the air in a large vessel, at the ordinary temperature, stirring it frequently, to oxidise the sulphuret of potassium and hyposulphite of potash; then precipitate with acetic acid,* and repeat the same operation with the same substance, should the precipitate still contain sulphur. Wash it with warm water, digest it with alcohol and ether, and do not consider it pure if any sulphur or sulphuric acid be found in it. When the potash-ley is stronger, the protein is formed more readily; but in such case the temperature and the time should be regulated accordingly.

It may be necessary, for the full understanding of one part of this process, to recal to your recollection the action of potash on sulphur, because it is through the agency of that substance that we separate the sulphur from the albumen, in order to produce protein.

When sulphur is dissolved in potash, either by fusion, or by boiling in water, sulphuret of potassium is formed; the oxygen of some of the potash going, as we shall immediately see, to form hyposulphurous acid, which unites with other potash.

* Care must be taken not to add the acid in excess. If this precaution be not taken, the precipitated protein will be re-dissolved.

From four equivalents of sulphur (4 S) and three of potash (3 KO), there are produced two equivalents of sulphuret of potassium (2 KS) and one of hyposulphite of potash ($S_2 O_2 KO$); further, sulphuret of potassium (KS), exposed to the air, is converted into hyposulphite of potash ($S_2 O_2 KO$), and, if an excess of alkali is present, the hyposulphite of potash is converted into one equivalent of sulphite and one of sulphate of potash ($SO_2 KO$ and $SO_3 KO$). Hence sulphur, with a due supply of oxygen and potash, is converted into sulphite and sulphate of potash.

In the present case, then, the following action takes place:—the sulphur of the albumen combines with potassium, and the oxygen of the potash goes to form hyposulphurous acid, which combines with fresh potash. The chemical changes we have just described then ensue.

By the above process, the protein is obtained in the form of greyish white flocks, which, when dried, become hard and yellow, and give an amber-coloured powder.

As a general rule, I shall avoid throughout these lectures all mere chemical details, and must therefore refer you to other sources for information regarding the actions of sulphuric, nitric, and hydrochloric acids, of chlorine, and of potash, on this substance. On these subjects you may consult my Introduction to Simon's Animal Chemistry, and Lehmann's "*Lehrbuch der Physiologischen Chemie*;" and, if you are desirous of making yourselves acquainted with the nature of the dispute between Liebig and Mulder regarding this substance, you must read "*Mulder's Reply to Liebig*."

With respect to the question whether sulphur is a constituent of protein, there is no doubt that, by following the directions of Mulder, we can obtain protein, which, when moistened with a solution of potash, and heated on a silver plate, will produce no blackening of the silver, and which will give no indication of sulphur when its solution is mixed with acetate of lead: hence we are justified in terming it *free from sulphur*, in the ordinary acceptation of the phrase. It is, however, always mixed with small quantities of hyposulphurous ($S_2 O_2$) and hypophosphorous acids (PO), the origin of which will be presently explained.

The formula originally assigned by Mulder to protein was $C_{40} H_{81} N_5 O_{12}$, while Liebig gave it (from Scherer's analyses) the formula $C_{48} H_{86} N_6 O_{14}$. Mulder afterwards changed the formula to $C_{40} H_{80} N_5 O_{12}$, in consequence of the change in the equivalent number of carbon from 76.437 to 75.12.

Investigations carried on by him in the

* Originally published in Dutch, but translated into English by Dr. Fromberg.

Utrecht Laboratory during the present year (1847), have shewn, however, that these formulæ contain too much nitrogen, because a part supposed to belong to the protein is now found to exist in it as an amide, and

not to belong to the protein itself. His present formula is $C_{88}H_{225}N_4O_{10} + 2HO$. The following table contains the numbers in 100 parts of protein calculated from these various formulæ:—

	$C_{40}H_{81}N_5O_{12}$ (C=76.437)	$C_{48}H_{81}N_5O_{14}$ (C=76.437)	$C_{88}H_{225}N_4O_{10} + 2HO$ (C=75.12).
Carbon . .	55.29 . .	55.742 . .	54.7
Hydrogen . .	7.00 . .	6.827 . .	6.8
Nitrogen . .	16.01 . .	16.148 . .	14.2
Oxygen . .	21.70 . .	21.228 . .	24.3

And now I shall endeavour to shew you why it is that the protein is almost always mixed with a small quantity of hyposulphurous acid. Mulder (in the same course of investigation that led to the determination of the new formula) has ascertained that "hair, whalebone, casein, legumin, albumen, fibrin, horny matter, and the nails, consist of nothing else than sulphamide (SNH_2) and phosphamide (PNH_2) combined in different proportions, either with protein or with an organic group which can bear no other name than that of oxide of protein." The hyposulphurous acid (S_2O_2) is a product of the decomposition of two equivalents of sulphamide ($2 SNH_2$) and of two equivalents of water ($2 HO$), which, by the influence of the potash required in the process, produce one equivalent of hyposulphurous acid and two equivalents of ammonia (S_2O_2 and $2 NH_3$). The ammonia escapes, while the hyposulphurous acid combines with a portion of the protein. Mulder adds, that the maximum quantity of hyposulphurous acid which he has been able to find with protein, or which that substance seems capable of taking up, is 2.4 per cent., which corresponds with 1.6 per cent. of sulphur, and is exactly the quantity found in albumen under the form of sulphamide. The hyposulphurous acid obstinately adheres to the protein in the same manner as sulphuric acid, phosphate of lime, metallic oxides, and several other bodies. If, however, such protein be dissolved in strong sulphuric acid, the hyposulphurous acid is expelled, and replaced by sulphuric acid, in a quantity amounting to 5 per cent.

Nothing is changed by these recent investigations but the formula: all that is requisite is, that the results already existing should be moulded into slightly different forms.

The following remarks on protein and its oxides are taken from "Mulder's Question to Liebig," published in the autumn of last year (1846).

1. *Anhydrous protein* is obtained from fibrin, albumen, casein, vegetable albumen, hair, and a great many other substances, by dissolving them in a tolerably strong solution of potash (for instance, one containing $\frac{1}{10}$ th of dry caustic potash) and applying an

elevated temperature for a short time. It is precipitated by acetic acid as a substance more or less coloured, at first flocculent, but afterwards, while still moist, viscid and resinous. When dried at 266° Fahr., it is anhydrous protein. This was the state in which he obtained it in his early experiments, and it was from protein in this condition that he and Liebig have calculated their respective formulæ.

All the substances that contain either protein, or the two first oxides of it, are united into one group by the three following common properties:—

(a.) On the addition of nitric acid, nitrogen and a little nitric oxide are evolved, oxalic acid and nitrate of ammonia are formed, and there remains undissolved a bright yellow matter, which, on being dried, assumes an orange tint, and which is known as *xantho-proteic acid*. (See Simon, vol. i, pp. 8-9.)

(β.) They all become purple when heated in an open vessel with strong hydrochloric acid; and,

(γ.) They are all precipitable from their acetic-acid solutions, by ferrocyanide of potassium.

2. *Hydrate of protein* is prepared from albumen, by a very weak potash ley, at a low temperature. It is not obtained from fibrin, nor probably from hair, nor from horn; in fact, those substances are unfit for yielding hydrate of protein which contain the binoxide, because, though they also contain protein, they will yield a mixture of the binoxide with it.

It is affected by various re-agents in the same manner as the former substance, but is more readily soluble in ammonia, acetic acid, weak potash ley, &c.; at 266° Fahr. it does not part with its equivalent of hydrate water, but this can be replaced by chlorous acid.

3. *Hydrate of protoxide of protein* occurs, according to Mulder, in the fibrin of blood, and perhaps it exists in the buffy coat; its principal properties agree with those of protein, but it is characterised in fibrin by being very soluble in acids. It is the substance which Mulder formerly described as binoxide of protein.

4. *Anhydrous binoxide of protein* may be prepared from hair and horn, by dissolving them in potash, and, after the precipitation of

any protein that may be present, by adding an excess of acetic acid to the filtered fluid, which causes the precipitation of the binoxide. It may be obtained from whalebone, by solution in strong acetic acid, and precipitation by ammonia. Another mode of preparing it is to boil fibrin in water; the whole or the greater part of the sulphur is then separated from the organic combination. Mulder is not certain whether "the substance that exists in vitellin, and in a soluble state also in serum of the blood," belongs to this or the preceding substance.

As it has several properties uncommon with the hydrate of protein, I will mention a few of the leading points of difference between them.

On adding a little acetic acid to an alkaline solution, containing both protein and binoxide of protein, the former is precipitated, while the latter remains in solution, and does not fall till an excess of acid is added. Protein is soluble in a large quantity of this acid; and although, therefore, a little of it might at first have been precipitated along with the binoxide, there is no danger of their being mixed in any considerable quantity.

Protein is insoluble in water, but the binoxide is more or less soluble. The former is insoluble, the latter soluble, in very weak acetic acid.

5. *Anhydrous tritoxide of protein* is obtained by dissolving chlorite of protein* in strong caustic ammonia; Van Laer prepared it from hair, in which case it was coloured like anhydrous protein.

6. *The hydrate of tritoxide of protein* is colourless, and is obtained either by boiling fibrin or albumen, or the buffy coat of the blood, in water; it is formed from the two first, but pre-exists in the buffy coat. It must be heated with alcohol, in order to dissolve an extraneous substance with which it is mixed. It may also be prepared, in large quantity, by pouring very weak ammonia upon chlorite of protein while still moist.

With regard to its properties, it is soluble

* Chlorite of protein is prepared by passing a current of chlorine gas, for several days continuously, through a solution of albumen. We obtain, not a product of decomposition, but a real combination of chlorous acid (ClO_2) with protein, which does not blacken silver when heated on it with a little potash. The quantity of sulphur it contains in the form of hyposulphurous acid, is equal to that of the sulphamide of an equivalent quantity of albumen. If duly prepared, the chlorite-compound does not contain more than 1.2 p. c. of sulphur, which corresponds to 1.83 p. c. of hyposulphurous acid. But this proportion is far from being constant or essential, for if a current of chlorine is passed through the acetic-acid solution, from which protein from fibrin has been precipitated, we obtain a chlorite of protein perfectly similar to that from albumen, but containing only 0.4 p. c. of sulphur, which corresponds to 0.6 p. c. of hyposulphurous acid.

in water, and not coagulable by heat; it is precipitated by dilute hydrochloric, sulphuric, and nitric acids, by tribasic phosphoric acid, gallic acid, chlorine water, bichloride of mercury, and neutral and basic acetate of lead; it is not affected by ferrocyanide of potassium, nor by dilute acetic acid.

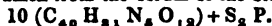
Before concluding the subject of protein, I would again endeavour to impress upon you the importance of this substance to the animal organisms. Three years ago, Mulder* wrote as follows:—

"The protein compounds contained in the animal body, as far as is yet known, are the following:—

Fibrin from blood is composed after the formula

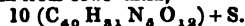


Albumen from the serum of the blood,



Albumen from eggs is the same as fibrin.

Casein from cows' milk,



The substance which forms the chief constituent of the crystalline lens of the eye,



We know, also, that muscular fibre is a compound of protein, and that it is contained, in the form of albumen, in the brain, the liver, the kidneys, and many other organs. Such compounds are likewise present in the serum, in the horns, nails, skin, and hair; oysters consist almost entirely of protein compounds, and they exist also in silk, and in the spider-threads of autumn. The physical, and some of the chemical differences which we observe in all these bodies, may arise from the presence of very small quantities of sulphur and phosphorus, and, perhaps, of other substances. All of these, however, without exception, contain the same organic combination—protein—as the chief constituent; a combination pre-existing in all of them, and permitting of the easy transformation of one into another."

The combinations of the above protein compounds (fibrin, albumen, and casein) with alkalis, acids, and salts, are, in many respects, physiologically interesting.

Protein is soluble in weak alkalis: since, therefore, the serum of the blood is always slightly alkaline, being, according to Mulder, a proteate of soda, with sulphur and phosphorus,—it may be the cause of the fibrin and albumen being retained in the blood in a state of solution. Possibly it is not a free alkali, but the alkaline phosphate of soda which gives the blood its alkaline reaction; this salt, however, like the free alkalis, exerts a well-marked solvent action on the protein-compounds.

* Versuch einer allgemeinen physiologischen Chemie. Dr. Kolbe's translation from the Dutch, pp. 312, &c. I refer to the German, in preference to the English translation, in consequence of the much greater progress made in the former.

If a weak alkaline solution of protein is neutralized by an acid, the solubility of the protein-compound is diminished; a fact explaining the therapeutic action of acids. Thus sulphuric and phosphoric acids possess the property of staunching blood, while acetic acid, which dissolves protein, does not possess a similar power. The fact that some acids form definite chemical compounds with protein, may explain their use in putrid fevers, scurvy, &c.

Finally, the protein compounds combine with certain basic salts. Thus casein contains phosphate of lime in the state of bone-earth ($8 \text{ CaO}, \text{HO}, 3 \text{ PO}_5$), a salt which probably also occurs in fibrin and albumen (at all events a phosphate of lime does), and through these is supplied to the bones. In casein (See Lect. I. p. 278), and consequently in milk, it exists in large quantity, and serves to supply in a short time much earthy matter to the bones of young animals. The actions of various metallic salts and oxides, either in poisonous or medicinal doses, may also be partly explained by the study of their action on the protein compounds when out of the system.

We have yet a very few words to say regarding the binoxide and tritoxide of protein. They both exist to a large extent in inflamed blood; they are produced during respiration, and are ordinary constituents of blood—usually, however, occurring in very small quantity. In every respiration a small quantity of them is produced, and they probably form round the blood-corpuscles a thin layer with the same composition as the inflammatory crust. They are produced by the oxidation of the fibrin in the lungs, and are decomposed in the capillary system, being employed in effecting the necessary metamorphoses of tissue. Too large an amount of these oxides gives rise to inflammation.

Tritoxide of protein is contained in pus, and was formerly known in that fluid as *pyin*.

I believe that I have now told you all that you need know regarding protein; I have omitted any notice of *protid* or *erythro-protid*, two substances obtained by the action of potash on protein, because there is some reason to doubt whether they are bodies of a constant composition, and further because they are at present substances of no importance in relation to the elucidation of any physiological or pathological facts.

I now proceed to the consideration of albumen, fibrin, casein, and globulin; and the references already made to these substances when speaking of protein will enable us to get over them very briefly.

Albumen is naturally soluble in water, and is found dissolved in the serum of the blood, in eggs, &c. But when it has once

been submitted to a certain degree of temperature, or to the action of various chemical reagents, it assumes the coagulated state and becomes insoluble in water.

Soluble albumen may be obtained in a solid form, by evaporating to dryness, at a temperature not exceeding 120° , the serum of the blood or white of egg. When digested in cold water, it ultimately dissolves, forming a mucilaginous, colourless, and insipid fluid, which, on being heated to 140° , begins to give indications of coagulating: if the solution be very dilute, the temperature may be raised to 165° without the occurrence of this change; and when present in very small quantity the albumen may not separate till the fluid boils, or even until the ebullition has proceeded for some time. If the white of egg, or serum of the blood, be submitted to a temperature of 167° , the albumen will assume the coagulated state, and not re-dissolve in water.

In his most recent Memoir on Protein, Mulder observes, that albumen from eggs, according to his former analysis and those of Rüling, and with the new determination of sulphur, consists of—

	Mulder.	Rüling.	Atoms.	Calculated.
C	53.5	53.4	36	53.8
H	7.0	7.0	26.85	6.7
N	15.5		4.42	15.6
O	22.0		12	21.9
P	0.4		0.05	0.4
S	1.6	1.7	0.4	1.6

This composition represents 20 eqs. of protein + HO , with 8 eqs. of sulphamide, and 1 eq. of phosphamide. Hence the formula for albumen given in p. 362 must be discarded.

Albumen is precipitated from fluids containing it by all the ordinary acids, with the exception of acetic, tartaric, and (tribasic) phosphoric acids (which not only do not precipitate it, but check the ordinary precipitation induced by heat), by alcohol, by numerous metallic salts, and especially by bichloride of mercury, and ferrocyanide of potassium. As the action of the last test may be impeded by the presence of free soda or its carbonate, the previous addition of a few drops of acetic acid may be advisable. Copious dilution with water causes a partial precipitation of albumen. The tests in most general use are heat and nitric acid; if, however, the solution is alkaline, or even neutral, the former test will fail, unless the fluid be previously acidulated with a few drops of a mineral acid; and in using nitric acid it must be remembered that a small precipitate will disappear if too much of the test be added. When they both produce turbidity or a precipitate, the existence of albumen may, as a general rule, be regarded as established.

Fibrin occurs in the animal kingdom in

two forms, dissolved and coagulated. The best method of obtaining it for chemical examination is either by briskly stirring newly-drawn blood with a little bundle of twigs, or else by shaking it in a stoppered bottle with a few bits of lead or tin. It adheres to these substances in the form of a nearly colourless coagulum. When treated with boiling ether, it yields from 2 to 4 per cent. of fat.

In 100 parts of fibrin Mulder has found,

Carbon . . .	52.66
Hydrogen . . .	6.93
Nitrogen . . .	15.51
Oxygen . . .	23.53
Sulphur . . .	1.04
Phosphorus . . .	0.33.

Mulder observes, that for reasons similar to those bearing on albumen, the formula given in page 362 requires modification. In fact, fibrin must be removed from the class of substances containing protein, and classed amongst those which contain oxide of protein.

Under the microscope we occasionally observe fibrin in a finely granular form, but it is most commonly seen to be composed of delicate fibres crossing in all directions.

Fibrin is distinguished by its spontaneous coagulation, by its insolubility in water and in alcohol, and by its precipitation from acid solutions by ferrocyanide of potassium.

Casein is the substance constituting the most important ingredient in the milk of the mammalia. I have given the two following modes of obtaining it, in my Introduction to Simon's Animal Chemistry.

a. Evaporate milk to dryness on the water-bath, triturate the solid residue, and treat it with boiling ether as long as it gives off any butter: when this ceases to be the case, evaporate off the ether (the butter having been removed), dissolve the residue in water, and filter. On the addition of alcohol to the clear filtered fluid, the casein is separated and thrown down. In order to remove any sugar of milk that may be entangled with the casein, the precipitate may be re-dissolved in water, and again thrown down by alcohol; if it be now collected and dissolved in water, it affords a tolerably pure solution of casein.

b. Casein may also be obtained by the addition of sulphuric (or any other) acid to the milk. Sulphate of casein is precipitated, which must be carefully washed in water, freed in the ordinary manner from butter, &c. and then digested with carbonate of lime. By careful and, if necessary, repeated filtration, we obtain a clear solution, which, however, is not free from lime.

A solution of casein prepared according to either of these methods, is possessed of little flavour; on the application of warmth it evolves a milky odour, and during evaporation it becomes covered with a skin or

film, which on being removed is speedily renewed. This film is due to the action of oxygen, as it does not form in an atmosphere of carbonic acid.

By a continuance of the evaporation we ultimately obtain a residue of dry casein. It appears as a yellow brittle substance, which is not perfectly soluble in water, in consequence of a portion of it having assumed an insoluble form during evaporation.

I have already mentioned that Mulder has assigned to casein the formula—



This was deduced from an analysis of casein from cow's milk, in which he found

Carbon . . .	54.96
Hydrogen . . .	7.15
Nitrogen . . .	15.80
Oxygen . . .	21.73
Sulphur . . .	0.36

More recent investigations shew that not only is the amount of sulphur in this analysis too low (Rüling* having found in three analyses of purified casein 0.996, 0.857, and 0.945), but that the substance we commonly term casein consists of *three different substances*.†

The alkalis exert a similar solvent power over casein as over protein, albumen, and fibrin. It differs from albumen in being precipitated by *all acids*; these reagents must, however, be applied cautiously, as casein is soluble in an excess of many acids. On the addition of ferrocyanide of potassium to a perfectly neutral solution of casein a slight precipitate is observed: if the solution is alkaline there is no perceptible effect, but if it is first rendered acid by a little acetic or dilute sulphuric acid, a copious precipitate is thrown down. The casein of cow's milk is thoroughly precipitated by the mucous membrane of the calf's stomach; on the addition of this reagent to woman's milk, imperfect coagulation sometimes occurs, but the coagulation is never perfect. In this case the mucous membrane of the child's stomach produces a more energetic action than that of the calf. If a quantity of potash or ammonia be added to the milk, sufficient to give it a decidedly alkaline reaction, no coagulation is effected.

Rochleder‡ has attempted to shew that pure casein is a substance nearly insoluble in water; that the so-called soluble casein is a combination of casein with potash, soda, or lime; and that the coagulation of the soluble casein by acids is nothing more than a separation of the casein resulting from the combination of the acid with the base of the

* Liebig und Wöhler's Annalen, &c. vol. lviii. page 301.

† Schlossberger, in Liebig und Wöhler's Annalen, vol. lviii. p. 92, and Mulder's Reply to Liebig, pp. 88—92.

‡ Liebig und Wöhler's Annalen, vol. xlv.

casein compound. In this manner he endeavours to explain how solution of potash, when added in very small quantity to milk, prevents coagulation, and why (especially in hot weather), very slight causes are able to produce a coagulation of the milk; as only the smallest quantity of lactic acid is required to be formed in order to neutralize the minute traces of potash or soda which are able to retain in a state of solution an enormous quantity of casein.

Globulin is a protein-compound forming the cell-walls of the blood-corpuscles. Mulder observes that its real composition is not known, but that it is unquestionably a protein-compound. Simon thinks it is casein. Dumas* has recently analysed blood-corpuscles (globulin and the contents of the corpuscles), and observed the following results:—

<i>Blood-corpuscles.</i>			
Of a woman.	Of dogs.		Of a rabbit.
55.1	55.1	55.4	54.1
7.1	7.2	7.1	7.1
17.2	17.3	17.3	17.5
20.6	20.4	20.2	21.3
100.0	100.0	100.0	100.0

Crystalline, for which Mulder has assigned the formula $15 (C_{40} H_{80} N_8 O_{12}) + S.$, is a substance which need not detain us at present.

If you should think that I have entered at an unnecessary length into the consideration of protein and its compounds, I would beg of you to recollect the extreme importance of the subject. You will find, as we proceed in this course, that there is hardly a tissue of the body in which the protein-compounds are not the most essential constituents.

THE SECRET OF SUCCESS IN CONDUCTING SCIENTIFIC RESEARCHES.

THERE must be an ardent love of truth as truth, in him who would so persevere as to follow her guidance up the steep path which alone leads to her secret dwelling-place; and with this, pride interferes: he who dwells upon or looks for his own exaltation, will soon have in all his studies another and lower aim than the discovery of the truth; not what she will reveal, but what will do him credit, will become the secret law of his motives: and to such a temper soon become familiar short paths and little ends, and tricky means which lead not to her seat, and to which she will not yield her hidden store.—*Bishop Wilberforce.*

* Comptes Rendus des Séances de l'Académie des Sciences, vol. xxii. p. 900.

LECTURES

DELIVERED AT

GUY'S HOSPITAL.

By G. OWEN REES, M.D. F.R.S.

Assistant Physician to the Hospital, and Principal Medical Officer to the Pentonville Prison.

LECTURE III.

DIABETES MELLITUS.

THE important form of disease to which I have to-day to direct your attention, and which is principally characterised by an inordinate discharge of urine, has long been known to professors of medicine. We find, indeed, that Galen and other Greek writers were familiar with the phenomena of certain forms of diabetes, and had even formed theories on the subject.

Thus, they conceived that when affected by this disease the kidneys were in a state of relaxation and extreme irritability, which caused a morbid activity, and as a consequence an excretion of the watery parts of the blood in an unelaborated or crude state. The Greeks, however, were unacquainted with the disease in its relation to the excretion of sugar, and their theories as well as treatment applied to the excretion of large quantities of water only, by the kidney.

In the present lecture it is my intention, in the first place, to restrict myself to a description of diabetes mellitus,—a disease characterised by the excretion of sugar by the kidney in conjunction with a large excess of water.

Dr. Willis, who flourished at the commencement of the 17th century, was the first who observed that *sugar* existed in the urine in diabetes. Sydenham has not mentioned it, though he wrote subsequently to the publication of Willis's discoveries. Many old writers, before Willis, had noticed that urine was occasionally sweet, but they always attributed it to saccharine ingesta, and in no way connected it with mal-assimilation.

Before I proceed to describe those general features of the disease by which it may be distinguished, independently of the state of the urine, I must beg you to remember that sugar is not one of the constituents of healthy urine, and that therefore in this disease we have a new principle generated. The water, however, is common to the urine, both in the healthy and diabetic state; and the explanation of its presence in excess is by far the less difficult part of the problem for solution. Sugar is not a constituent of healthy blood while it exists in the blood of diabetes, and the question therefore appears more especially connected with the history of the circulating fluid, or the condition of those organs more immediately concerned in its formation.

Recent inquiries have proved that sugar is first formed in the stomach. I state these points thus early, in order that the subjects of sanguification and chylification may be present to your minds, while I am describing the symptoms characteristic of this disease; for you will thus be assisted to a more correct view of the question. The following is a list of the symptoms most prominently marked in diabetes mellitus:—Emaciation, pulse generally accelerated, thirst, dryness and heat of skin, excessive discharge of urine of a high specific gravity and containing sugar, headache, occasional voracious appetite, and constipation of the bowels; loss more or less complete of venereal desire, dryness of the tongue, the organ being occasionally cleft and abraded, or its surface arranged in deep rugæ of a polished red colour. The gums are swollen and soft, and excoriation of the glans penis in males, and an irritable state of the meatus in females, is often observed in protracted cases of this disease. In advanced cases we often observe also the patient shows a remarkable tendency to somnolency, even during the most cheerful hours of the day.

The appearance of the diabetic is generally characteristic of depression and anxiety. The principal source of gratification, so far as physical conditions are concerned in the production of happiness, consists in the satisfaction of a craving appetite for food, which, when appeased by distension of the stomach, is succeeded by the miserable sensations of dyspepsia. The whole nervous energies appear weakened, and in males a sense of degradation productive of deep dejection frequently appears to hasten the fatal termination of the case,—a result often brought about by sudden effusion on the brain, and complication with phthisis.

As regards the formation of sugar, we have ascertained that the blood contains that principle, and therefore can feel no difficulty in understanding how it gets into the urine. Again, the blood becomes so degenerated because the stomach has been shown in fault; and this, which seems to form the first in the chain of causation, is the organ to which I shall first direct attention, in order to give you as clear a view as I am able of the present state of our knowledge concerning this important disease.

Let us first, then, inquire into the evidence we possess that sugar is formed in the stomach in diabetes; for if we are satisfied on this point, the limits of our inquiry will be much contracted, and we have little else to do than to study the phenomena of digestion for an explanation of the disease,—unless, indeed, we find that in health also sugar is formed in the stomach, which subsequently rapidly disappears during circulation in the blood, and does not appear in the urine; for if this be the case, the cause of the disease

will have to be sought in some unhealthy state of the circulating fluid which refuses to transform the sugar absorbed from the stomach into nutritious substances, or other matters useful to the economy.

In the first place, then, let us consider the evidence we have as to whether or not sugar is formed in the stomach during healthy digestion. Dr. Prout holds that during the digestion of starchy vegetable matters there takes place a change or modification in the arrangements of their elements which causes the formation of a low kind of sugar analogous to the diabetic sugar. This, however, is merely a transitory condition in health, and as speedily as it is formed further changes take place, he believes, which destroy this sugar, causing its modification into oleaginous and albuminous products.

Tiedemann and Gmelin made some observations on the digestion of amylaceous substances, and came to a similar conclusion with Dr. Prout, having succeeded in forming gum and sugar in the stomachs of dogs fed on starch. It is a matter of doubt, however, whether the saliva rather than the gastric juice be not the agent in bringing about these changes, for it is well ascertained from experiments made by Leuchs and Schwann, that starch by maceration in saliva at a gentle heat is changed into gummy and saccharine matter.

Now, that this change is in health but a transient one, appears pretty certain; and I will relate to you some experiments made by Dr. Percy, of Birmingham, on the subject.

Dr. Percy fed a dog on wheaten flour, heated with water and made into a paste; and in about three hours destroyed the animal by hanging. He then took the contents of the stomach and digested them several hours at a temperature of 98° to 120°. On drying and analysing this mass he discovered a considerable quantity of sugar, from which he was able to obtain alcohol. This experiment, however, did not prove that the stomach had formed the sugar, for long digestion of flour with water and hydrochloric acid, at a high temperature, will always form sugar, and we know that free acid was present in the contents of this stomach, and he applied a heat far above that existing in the healthy stomach.

Dr. Percy being aware of this source of fallacy, however, carefully repeated the experiment, avoiding the digestion of the mass, and simply drying it: under these circumstances he obtained no sugar, but a considerable quantity of dextrine,—a substance to which I shall now call your attention.

Most of you, I dare say, are aware that during the germination of seeds, the starch contained in them becomes changed into substances soluble in cold water. It was for some time believed that the starch was

immediately converted into sugar and gum; but further inquiry showed that the substance produced during the first part of the process was neither one nor the other of these principles, but a product of a peculiar nature, having properties intermediate between those of starch and sugar: thus it was soluble in water, but was not sweet to the taste. Now it was discovered that in all vegetating seeds there existed a small portion of glutinous matter, which was found to play an important part in these conversions, and by extracting this gluten from seeds we have been able to produce artificially in starch the same changes which go on in the starch of seeds during their vegetation. To this glutinous substance the name of *diastase* has been given, and the intermediate substance it forms, by acting on starch, is called dextrine. It would appear probable, then, that, during the action of the gastric juice on amylaceous or starchy ingesta, we have either dextrine or some substance closely allied to it formed in the stomach, but that the formation of sugar is arrested. It is obvious that we have in health some powerful force acting not only to prevent starch becoming sugar in the stomach, but also to destroy sugar immediately on its admission into that viscus by contact with the gastric juice; for we know that sugar does not get into the blood or urine, when taken in health, in anything approaching to a moderate proportion. Dr. Percy, it is true, succeeded in obtaining sugar from the urine of a healthy dog that had been fed on sugar alone; but then no other aliment was allowed, and enormous quantities of sugar were eaten by the animal. The experiment therefore only goes to shew that the existence of sugar in the blood and urine of diabetics is a consequence to be expected as a matter of course, if the stomach form sugar in large quantities as it does in that disease; and we must by no means suppose that the stomach, unless deranged, as the dog's was by an exclusive diet of sugar, will allow the passage of sugar into the blood and urine. Not only is sugar immediately destroyed by the action going on in the stomach during healthy digestion, but we may even allow sugar to be injected into the veins, and still it cannot be detected in the urine unless the quantity injected be very large indeed.

Dr. Percy injected 200 grs. of the crystallised residuum of diabetic urine into the right jugular of a large mastiff, but could detect no sugar in the urine after the lapse of an hour and a half. In another experiment, however, in which he injected 1500 grains of cane sugar into the jugular of a smaller dog, he succeeded in obtaining evidence of sugar in the urine.

Now, the fact that the first quantity of

sugar disappeared from the blood, shews that in health the organism is provided with the means of destroying sugar both in the stomach and in the circulation, and that it is only when it is present in overpowering quantity that we have it present in the urine.

Now, in diabetes, the derangement of the stomach is such, that not only is sugar, when swallowed, unacted upon as it should be, and destroyed, but we have it produced from every form of starchy food. Mr. M'Gregor, of Glasgow, was the first clearly to show that we could find sugar in the stomachs of diabetics, and thus to prove that we must look to the *primæ viæ* for the cause of this disease. He obtained the sugar by the use of emetics which the patient swallowed at intervals after taking food, and was thus enabled to prove, not only that starch became converted into sugar in the stomachs of diabetics, but also that animal matters or aliment, *quite free from starch*, became converted into sugar in like manner. This latter fact is one, however, which must be received with caution, and further experiment is necessary.

In considering the humoral pathology of this disease, we must not forget that there is another fluid besides the gastric juice which is acting upon the food during digestion, viz. the saliva; and very important results have been obtained on this fluid in relation to diabetes by M. Mialhe. That gentleman obtained a substance from saliva to which he has given the name of *animal diastase*. This, like the vegetable principle, possesses the property of decomposing starch into dextrine very rapidly, and so completely, that it no longer strikes a blue colour when tested by the addition of iodine. It appears, therefore, that the saliva has an important part to play in the digestion of starchy matters in health, and the diseased action observed in diabetes may, in all probability, be correctly attributed to a deficiency of some principle, either in the saliva or gastric juice, which, in health, corrects the action of the animal diastase, and prevents it producing a further change in the dextrine formed from starch. Whether this moderating power belongs to the gastric juice or not, we cannot at present say, but certain it is, that in health sugar is rapidly destroyed during digestion. Thus, in health, if starch be taken into the stomach, the changes for the formation of sugar go on only so far as the production of dextrine, and there cease, while fatty matter is produced instead of sugar as a final result.

Now the blood appears, according to Dr. Percy, to exert some action on sugar when it is injected into the veins, and I have stated that he, having injected some diabetic sugar into the jugular of a dog, could detect none in the blood after the lapse of

an hour and a half. This experiment is, however, directly at variance with experiments recorded by Messrs. Bernard and Barreswill, who consider they have proved that sugar, if injected into the veins, is always excreted as such. The probability is, however, that it is changed, as Dr. Percy has shown, when present only in *small quantity*, as is the case in healthy digestion.

We have, therefore, in health, the means of checking the entrance of sugar into the urine, both by the actions of chymification and sanguification, while in diabetes sugar is formed in such quantity during chymification as to overcome the transforming power present in the blood.

Now sugar getting into the blood, and thence into the urine, materially alters the healthy qualities of those fluids. The serum, as you will see by the diagram I now show you, becomes impregnated with urea as well as sugar, and its proportion of salt is much decreased. The proportion of extractives taken together is much the same as in health; but the weight of the alcoholic extractive is increased, while that of the extractive soluble in water only is decreased proportionally.

The fatty matter, you will observe, is much less than in health, and, if we add the weight of the sugar present to the weight of fat, we get little more than the weight of the fats observed in health.

Now this deficiency of fatty matter in the serum forms an important part of the history of the blood in diabetes, and goes far to prove the correctness of that view which ascribes the existence of diabetes to mal-assimilation of the character I have described, viz. to the formation of *sugar* from the dextrine of the stomach instead of *fat*. This point, however, cannot be regarded as well ascertained, for Simon, in one of his analyses, gives an equal proportion of fat in diabetic blood.

The urine excreted in this disease is always in excessive quantity, and proves to contain sugar on examination. The quantity voided during the twenty-four hours is generally above four pints, instead of two to two and a half pints, as in health. Instances are, indeed, on record, in which as much as thirty pints were excreted in one day; but this is extremely rare, and, for the most part, we seldom observe more than twelve pints.

The specific gravity of the urine in diabetes is almost always considerably above the normal standard. It generally varies from 1030 to 1057, the specific gravity of health being about 1018 to 1022. Dr. Prout met with a case of saccharine diabetes in which the specific gravity was only 1015; but this must be regarded as an anomaly, for cases in which the lighter specific gravity of health is even approached are rare.

Diabetic urine is usually of a pale straw

colour, and free from sediment. It froths easily on agitation, and emits a peculiar odour, somewhat resembling hay. When any deposit does occur in this kind of urine, it is generally composed either of lithic acid or caseous matter. The presence of lithic acid may be regarded as a favourable indication, and is for the most part, I believe, observed in incipient cases of diabetes. When caseous matter exists as a deposit, we have a rapid fermentation induced in the urine, so that, soon after it is voided, the whole mass of liquid becomes filled with bubbles of carbonic acid gas, and the diabetic sugar present is rapidly decomposed. During this fermentation, a peculiar fungoid growth, observed in diabetic urine, and known as the *torrula diabetica*, is developed in large quantity, and may easily be seen on microscopic examination. You will observe a figure of the microscopic appearance of the *torrula* on this diagram.

It often happens that the clothing of males, especially when dressed in black, shows the disease by the saccharine matter depositing and crystallising on them. This is well worth remembering, as I have known it lead to the detection of the disease.

The examination of the urine in relation to specific gravity is of course one of the most ready methods of determining the presence of diabetes; but as diabetic urine is occasionally as low as 1025 in specific gravity, and healthy urine, after a full meal, often rises as high as 1030 or even 1032, we must never be contented with the indications of the urinometer alone, but have recourse to those tests which serve to show the presence of sugar.

When I was treating of the subject of albuminuria, I told you that the albumen, even in very old and confirmed cases, was occasionally wanting in the urine for days together, and a similar remark applies to the presence of sugar in diabetes. I have known its place in the urine suddenly supplied by an enormous excretion of urea, and that, too, without any change of medicine or diet to account for the fact. It might at first be supposed that the occurrence of this alternation of urea with sugar in these cases was a favourable indication in the disease, but, from what I have seen, I have no reason to believe so. The instances I have met with have occurred in the progress of cases that resisted treatment, and left the hospital unrelieved.

The quantity of solid matters excreted by the urine of diabetics is, as you may suppose, very large, the urine passed being not only in great quantity, but of a very high specific gravity.

The fact that the weight of the matters excreted as solids sometimes exceeds that of the matters taken into the stomach, will of

course account for the rapid emaciation noticed in some cases; but the quantity of liquid excreted may in such cases of loss of solid exceed the quantity of liquid taken into the system, and yet the body not lose in weight. Mr. M'Gregor, of Glasgow, has shown this, and it appears very probable that the difference is made up by the absorption of fluid from the atmosphere by the lungs, and, not improbably, by the skin also.

The post-mortem appearances observed in diabetes have not been such as to throw much light on the subject. The kidneys are generally found enlarged and flabby: this probably is an effect of long-continued overaction. The stomach in diabetes has lately been carefully examined by Mr. Busk, who, in two cases which came under the notice of Dr. Percy, had opportunities of showing the presence of confervoid growths. The existence of these in the stomachs of diabetics only shows that sugar is present, however; and as no lesion of structure of the mucous surface of the organ, or any other peculiarity, could be detected, we are still quite unassisted by solid anatomy in our search for the origin of this disease.

The causes in action for the production of diabetes are, constitutional hereditary tendency, and cachexia as induced by intemperance of all kinds, and by those excesses supposed to be more especially productive of emaciation.

It is not at all uncommon to find several members of the same family the subjects of diabetes; and this fact became known among practitioners very soon after saccharine diabetes was recognised as a peculiar affection.

It would appear that the treatment of diabetes, from what I have now told you concerning its pathology, ought more especially to be directed towards improving the condition of the stomach, and, if possible, removing that tendency to the development of sugar on which the whole mischief depends.

We are, however, but mere empirics in our treatment of this disease: we have no principles to guide us in the attainment of the object, and our medicines for alleviation or cure are such as have been derived from experience alone, and with the action of which we are but little acquainted. We do not know how we may endow the stomach with that property which it has lost, and which enabled it in the healthy state to decompose sugar into oleaginous or fatty matters for the purposes of the economy, and how to stop the ordinary action of the animal diastase after it has formed starch into dextrine, and to induce the change of this latter substance (dextrine) into fat, instead of into sugar. But we have still means of alleviating, and, I believe, when we can obtain recent cases, even of curing diabetes.

Among the remedies which experience has shown capable of exerting an influence over the diabetic condition, perhaps opium deserves the first notice: it possesses the power of lessening the flow of urine in a marked degree, and tends to produce moisture on the hard and roughened skin of diabetics. It tends to arrest the progress of waste, by lessening the quantity of solid as well as fluid excreted during the day, and may be regarded, on this account, as at all times a valuable adjunct to other remedies. In advanced stages of the disease, especially when much drowsiness is present, this remedy must be administered with great caution. I have stated that a liability to cerebral effusion exists in such cases; and, whatever benefit may have been derived from the remedy, it is right to omit opium altogether on the first indications of a tendency to sleepiness during the day, unless it has been well ascertained that the disease is of recent occurrence.

In those early cases in which we may hope to obtain benefit from the use of remedies, it is of the highest importance, during their exhibition, carefully to attend to the state of the bowels. Constipation not only deranges the action of the chylopoietic organs generally, but, it is almost certain, must (to a certain extent) interfere mechanically with the process of lacteal absorption. It is surprising to see the enormous quantity of *faeces* which may be occasionally brought away from diabetics by a brisk purgative, and that, too, when the abdomen has not been prominent or distended in any marked degree.

When we fail in acting upon the skin by opium, we may sometimes succeed in obtaining our object more immediately by combining it with antimony. A draught composed of 3 drachms of the *Liquor Ammoniae Acetatis*, and 20 minims of the *Vinum Antimonii Potassio-tartratis*, given three times during the day, together with opium in the form of a pill, is an excellent plan for obtaining an action on the skin in early cases. This may afterwards be kept up by baths and frictions, while the antimony and opium may be gradually decreased, and recourse had to stomachic medicines. Among these, magnesia has obtained a high character, and I have seen much benefit from its exhibition in combination with the Dover's powder. The specific gravity of the urine will frequently decrease under its use, and the quantity of sugar lessen considerably. Large doses of ammonia have also been used with good effect in diabetes, but I have seen no reason to consider it equal to magnesia as a remedy. The mineral acids have been frequently used in the course of the disease. I have made use of the hydrochloric acid with very good

temporary effect in some cases, and on one occasion observed considerable improvement, in an advanced stage of the disease, from the continued use of the acid in large doses: as much as a dram of the strong acid was given during the day, diluted in a pint and a half of water. The patient gained flesh very evidently while under this plan of treatment.

I do not know that I can add much to assist you by enumerating the various remedies which have been from time to time proposed as efficacious for the relief or the cure of this disease, many of them proposed in the most fanciful spirit of hypothesis.

The great thing to observe in the treatment of this as well as all other diseases the pathology of which is involved in uncertainty, is to keep constant watch upon symptoms, and to attempt their alleviation, so far as we are able to judge of their character, upon the general principles of medical science. As regards diet, though you will do well to restrict your patients in the use of saccharine and amylaceous articles of diet, still you may easily carry this principle too far; and, on the whole, I am of opinion, from the cases I have had an opportunity of observing, that the moderate use of starchy aliment is in no way inconsistent with the well-doing of the patient. I have known a patient the subject of long-continued diabetes who improved much and gained flesh considerably while potatoes were allowed her in full quantity at dinner. On the whole, it is well to encourage the consumption of bread, rather than of farinaceous vegetables; not, however, so much with a view of assisting in the cure of the disease, as for the purpose of obtaining a more prominent test from the examination of the urine, as to the progress made by remedies. Thus, if food which produces but little sugar in diabetic urine be administered, we shall more easily obtain an entire exemption from sugar as our remedies proceed in the alleviation of the disease.

I believe that this circumstance has led to the false opinion that abstinence from starchy and saccharine ingesta assists in the cure of diabetes, and to the mischievous practice of tormenting the patient with a purely animal diet. It is important that you should remember that a diet composed of fatty matters tends much to assist in the nutrition and support of the patient during the exhibition of remedies. Butter may be given freely with this view, and it will in most cases be found agreeable to the palate.

The use of small quantities of vegetables, with an ample allowance of bread and meat, may be enjoined; and, if the patient can eat them without feeling a sense of uneasiness afterwards, greens and leguminous vegetables may be preferred, as, from their

containing less starch, they tend less to load the urine with sugar. If I were to prescribe an exact diet for the diabetic patient, which, with but slight modification, according to temperament, idiosyncrasy, and the duration of the disease, might be expected to agree well, I should say that the breakfast should consist of three-quarters of a pint of strong cocoa, with six to ten ounces of bread, and an ample supply of the best fresh butter. Dinner—Three-quarters of a pound of meat, weighed after being dressed, and freed of bone; twelve ounces of bread, four ounces of cabbage, or two of potatoes. Tea may be taken, with bread and butter, as usual, but with little or no sugar. Supper should consist of plain bread and milk.

The excessive appetite observed in diabetes will be best met under this diet by an extra allowance of meat at dinner.

The liquids allowed at dinner must vary according to the state of the patient; wine and brandy diluted with water, being, as a general rule, preferable to malt liquor.

STRUCTURE OF THE OVUM.

MM. PAPPENHEIM and VOGT, in their Prize Essay on the Reproductive Organs of Vertebrata,* show that in all classes of vertebrate animals, the ovulum at its development is surrounded by the layer of granular particles, or *discus proligerus*; the existence of which in the lower orders of vertebrata has been disputed. The only peculiarity which he notices in regard to this granular layer in different animals, is that the quantity of the corpuscles, of which it is composed, varies, and that the period of their duration is not always the same. In mammifera, but especially in birds, these particles speedily disappear; whilst in the osseous fishes they are persistent, and constitute, by their assemblage around the vitelline membrane, the shell with which the ovum of these animals is already provided previous to its entrance into the oviduct. So that in these fishes, the ovary alone is charged with the office of forming all that is necessary for the protection of the ovule, as well as for its essential constitution as a reproductive organ. But in those vertebrate animals which are possessed of a more perfect organization, a division of this physiological labour is observed: the granular particles of the *discus proligerus* forming the ovary, cease to enjoy an important rank, and disappear more or less rapidly; whilst a system of glands, no trace of which is found in the osseous fishes, comes to be added in the oviduct, and furnishes to the ovule one or more special envelopes.

* Report on, by M. Milne Edwards, in the *Comptes Rendus*, 26 Avril, 1847.

Original Communications.

THE SEQUELS OF SCARLET FEVER AND MEASLES.

By J. A. HINGESTON, Esq.

(A Paper read before the Brighton and Sussex Medico-Chirurgical Society, Aug. 5th, 1847.
Dr. KING, President, in the Chair.)

As far back as the year 1843, I published in the pages of the *GAZETTE* some pathological remarks on scarlet fever, showing that this disease is, at a certain period of its course, an inflammatory one, requiring the aid of antiphlogistic measures. As my experience enlarged, my views became, of course, wider, and I was able to compare scarlet fever with other disorders, especially with measles: the conclusions of my mind upon which, I now submit to your approval and publication in the pages of your periodical, if you please.

It is not generally admitted, even if it be understood,—at least I have not hitherto found it distinctly stated in medical works,—that there is an essential difference between scarlet fever and measles exhibited in the particular mode in which the poison of either disease subsides of itself, or is eliminated from the constitution—the one subsiding or settling upon the liver, or being eliminated through it, and the other subsiding or settling upon the kidneys, or being eliminated through them. Both these diseases fall upon the skin in their primary manifestations; but, in their sequels, they are respectively opposite and different; for, in its issue, the measles attacks the liver, while the scarlet fever attacks the renal emunctories. This is the proposition of the case, or the problem that I wish to propound or prove.

I apprehend that the strumous diathesis will be found predominant in either predicament. But, where is struma not predominant, if not latent? The manifold cares and anxieties, or, in other words, the numerous causes of vital exhaustion which subsist in savage or civilised life, are more than sufficient to engender or aggravate

struma, the most lamentable of human ailments, and the most lingering of incurable maladies. The first and the last stages of phthisis pulmonalis; the suppuration of a single cervical gland, and the destructive ulceration of the synovial membrane of the knee-joint; the precocious intellect of strumous childhood, and the premature old age of strumous manhood: are alike signs too well known to those before whom I am speaking, to render it necessary or becoming in me to dwell upon the peculiar character of health or disease which they indicate, or to describe the fatal goal towards which they tend and advance with uncontrollable obstinacy, and very often with amazing velocity.

Whatever depresses the vital forces is the cause of struma—a cause whose habitation is favoured by the congenital or acquired debility of the great nervous centres—the cerebro-spinal axis, which, in the discharge of its several functions, betrays a greater or less imperfection in their respective failures. In the brain itself, the governing organ of life, resides the origin of all chronic, if not of all active, maladies. Blushing, the most common imperfection or virtue of the strumous habit, arises from debility of the brain, which, incapable of sustaining the shock of mental emotion, becomes, all of a sudden, powerless in its guard over the superficial or peripheral vessels of the cheeks, so that their capillaries, unexpectedly and ungovernably relaxed, admit the red blood to flow into them and to remain fixed there, for a time at least, in spite of every act of volition to the contrary. This is, in principle, an explanation of acute inflammation; there being, perhaps, no inflammation that does not begin in local or general debility; the received Hunterian dogma of *excess of arterial action* being an exceedingly debateable question. Not that this alters in the slightest degree the usual treatment, which rests upon *fact* and *experience*, and not at all upon the *probabilities* of this or that theory entertained by pathologists either of ancient or modern date.

But, to return to the subject of our present inquiry, namely, that of measles and scarlet fever, both of them being a poison eventually set free, the latter through the kidneys, and the former by the liver.

I appeal to those who have carefully attended to these two diseases, and request them to consider whether they have not observed diarrhoea follow upon measles, and renal affections succeed to the scarlatina? I submit the question to practitioners of large experience, or, if not to those of large practice, at least to those of still larger minds, who have well observed what little they may have been called upon to treat. For there is a wide difference between those who have seen a great deal carelessly, and those who have seen much less, but, at the same time, have studied what little they may have seen with care and attention.

Now the three great emunctories of the frame are the lungs, the liver, and the kidneys,—by the kidneys are eliminated the azotised or nitrogenous compounds in a fluid form,—by the liver the carbonaceous materials in a solid form,—and by the lungs the same carbonaceous materials in a gaseous or aerial form—namely, that of carbonic acid gas. Cruveilhier, in some very striking experiments, has shown, that, by introducing certain heterogeneous particles into the blood through the veins, one or other of these three great emunctories becomes deranged according to the kind of poison or obstruction that has been introduced. The first effect of these deleterious substances is on the veins themselves, that is to say, provided that these substances are arrested in their course before reaching the arterial branches or ramifications of the circulating tree, producing pus in the veins—phlebitis, in fact,—gangrene, and death. But if these heterogeneous particles pass forwards from the veins into the arteries, their ultimate effects fall upon the more vital organs far removed from the seat of the original mischief, giving rise to abscesses in the muscles, the joints, the eye, the liver, softening of the various tissues, inflammations in distant organs, depositions of pus, blood, lymph, and serous effusions. And what is very singular is, that Gaspard agrees with Cruveilhier in asserting that, in its course along the current of the circulation, the poison finds great difficulty in its transmission from the *arterial* to the *venous* capillaries; while Cruveilhier remarks that, in successful cases, the poison, when dilute or in small quantity, is *eliminated*

by intestinal or urinary excretion, but that when large or concentrated it kills. Tiedemann and Magendie have, indeed, put the question almost entirely at rest by their experiments, which demonstrate that the liver and the lungs are the two great emunctories of the frame; and it is owing, perhaps, to this, says Dr. Ferguson, who has written very ably on this point of pathology, and from whose work on Puerperal Diseases the foregoing observations are chiefly borrowed—it is owing, perhaps, to this, that they (the lungs and the liver) are, of all the organs of the body, the seats of the greatest number of maladies. Surgeons know well enough the fever that follows upon amputation when the veins have been injured, or have become the focus of suppurative inflammation—a fever which is as well known to them in its source as it is in its almost invariably fatal issue. And the accoucheur knows far better than I am able to describe to him, the formidable symptoms of puerperal peritonitis, its rapid progress, and its lamentable catastrophe—a catastrophe originating, as Cruveilhier has so picturesquely portrayed, in a pathological condition both of the womb in particular and of the constitution in general, precisely similar to that following upon the amputation of a limb, or the introduction of a morbid poison into the veins; deranged excretions, pus, &c., together with inflammation of the veins (phlebitis), disturbed circulation, typhus fever, delirium, purulent infiltrations, and death. In fact, the patient dies of poison. It is probable that some of the symptoms of the hectic infesting the last stages of phthisis pulmonalis may be attributable to the absorption of pus from the lungs, and that the colliquative diarrhoea which precedes the end may arise from the purulent matter continually welling up from the ulcerated lung, and as frequently swallowed as spat out by the patient; for the pus thus swallowed carries with it the germs of struma, and infects the intestinal glands with it; besides which, diarrhoea is, as is generally known, one of the modes by which pus is evacuated from the system.

I have been led to introduce these remarks in order to show that it is not a private opinion of my own, but that it is the conviction of some of the most

approved pathologists in Europe, that the mass of circulating blood may be poisoned, and that the poison thus circulating is eliminated from the blood through the channel of one or other of the three great emunctories of the frame.

[i.] Thus, it will be found that, after the measles have passed by, and the eruption has effloresced and disappeared in the usual way, there supervenes a stage characterised by gastro-hepatic symptoms, eruptions at the angles of the mouth, or sore eyes (lip-pitudo, or chronic conjunctivitis of a scrofulous aspect). The liver is either directly or indirectly brought to a halt; there is black or pale, and eventually exceedingly yellow, bile. The countenance becomes flushed and excited, the sleep disturbed, the appetite diminished or lost, and the pulse and the heart's action accelerated. It may be there is bilious vomiting or diarrhoea, in which what is popularly called "*an overflow of bile*," shows itself. On the loss of appetite quickly follows failure of the strength, and with the hurry of the pulse is associated fever. Now, if the poison of measles be not (as I apprehend it ought to be) eliminated through the liver, or if the liver remain torpid and inactive even under the exhibition of its ordinary medical stimulants or reagents, it will follow that the fever runs into the type of what is usually known as infantile remittent fever, that is to say, a fever with irregular intermissions, chiefly affecting the muco-hepatic surfaces, and continuing from one to six or eight weeks. During his anxious interval, there will be observed obstinate derangement of the entire alimentary canal, a very white tongue, costive or relaxed bowels, thirst, absolute loss of appetite, debility, delirium, emaciation, and death; or, on the contrary, instead of death, recovery from the lowest and most alarming stage of attenuation and decline. The most favourable crisis is vomiting—the vomiting of yellow or green bilious matters,—or diarrhoea, sudden and unexpected, by which the alimentary canal is discharged of its morbid contents, or the liver is emulged of its overloaded or poisonous congestion. But if this diarrhoea or vomiting do not take place, the fever proceeds, and may, after having lasted a certain number of days or weeks,

subside by leaving the little sufferer as thin as a ghost and as pale as the waning moon. When the mother holds her darling in her lap, scarcely discernible in point of colour from the sheet that envelopes its wasted limbs, she may begin to hope that the sharpness of death has passed, and that her offspring will be restored to life as well as to its wonted hue and noisy animation and strength.

[ii.] But the reverse of all this is the case in the sequels of scarlet-fever. Of the many cases that I have been unhappy enough to witness, I never saw one in which, when the kidneys had been decidedly affected, a perfect restoration to the former state of health was ever accomplished. They have all declined. The passing hopes of to-day have been blighted by the positive relapse of to-morrow; and though, in some instances, several years have ensued, yet the event has been always the same, and the starting-point of the illness has never failed to terminate in protracted hopes, disappointment, and death.

When we consider that the kidneys,—the great emunctories of those deleterious elements which, if retained within the round of the circulating blood, act as a specific poison on the brain,—are the organs primarily and chiefly affected, there can be no hesitation in declaring, that, if their natural or normal tone be not restored at once, death must, sooner or later, be the inevitable result. This is the simple fact. The inflammation of scarlet fever is, by one of the hitherto unexplained operations in disease, translated from the skin to the kidneys, which, when thus attacked, are no longer able to excrete the nitrogenous compounds from the blood, and, consequently, become the immediate instrument for interrupting and putting a stop to the functions of the arterial and cerebro-spinal systems together; for, if these nitrogenous or azotised materials be not excreted, but are retained and sent back on the brain, they operate as a direct poison, depress the vital forces, and eventually disable and annihilate the whole process of life. The truth is, when, upon discovering that after scarlet fever the urine contains no lithic acid, nor any of the lithates (the *lateritious deposit* of health), but that, on the contrary,

it betrays the presence of the phosphates, or albumen, or blood (hæmaturia), we may be sure that the kidneys are in such a case already the seat of the diseased poison, virus, or action, that there is danger either immediate or remote, and that the final debility or decease of the patient may be predicted with the greatest certainty. I have not yet seen a confirmed case of this description ever recovered from. There is something so extremely delicate in the renal tissue, and, at the same time, something so essential to life in its perfect capacity, that any intermediate stage between its primitive perfection and its ultimate disorganisation is, in its various proportions, phases, and degrees, equally detrimental or destructive to the animal economy.

The result of renal disorder in consequence of scarlet fever, is profound debility,—a debility which, as it generally happens at an early or a premature age, it is very mournful to witness. At its commencement there is doubtless a stage of inflammation which can be met and successfully treated by the ordinary antiphlogistic remedies; only this stage is very short; and, if it be not foreseen in its onset, if its transit be not perceived, or if its existence have not been recognised,—then its after-treatment is nugatory, at least only palliative. It is during the inflammatory stage that the brain is troubled with meningitis—a kind of inflammation by no means uncommon in connection with primary or secondary disorders of the kidney. At the first, while the urine is high-coloured, scanty, and of a high specific gravity, the proper treatment will consist in calomel, salines, antimony, venesection, cupping, or leeches; but afterwards, when the acute stage, short as it is, has passed away, nothing will be beneficial, except the warmer purgatives, good food, the mineral acids, and removal to a more invigorating air. Recovery will, in a certain degree, reward the adoption of these measures, but perfect recovery never. The die has been cast: the lot of life is determined, and nothing remains but a broken constitution, scarcely worth the having.

The end of these cases is permanent debility. I have seen it at all ages—at 12, at 15, and at 45. One of the

saddest results is, that, as the brain declines in power, stimulants are proportionally more and more requisite; for the sinuses of the encephalon are, from their anatomical construction, incapable of contraction, and, consequently, cannot accommodate themselves to the diminished stream of blood. Now, as the heart declines in power, the jet of arterial blood thrown up into the brain is depressed,—the same stream does not continue to reach the great nervous centres,—energy declines,—and, with the loss of cerebral energy, declines *pari passu* the tonic functions of the spinal cord and the kidneys. Thus power is lost, and with the loss of power in general is also lost the particular energy to excrete the lithates—those poisonous elements of the circulating mass of blood: in short, all is lost, except under the pressure of ardent spirits and the highest therapeutic tonics, which can, however, be sustained only for a limited length of time. The glands of the neck inflame, indurate, and run into suppuration: the pus is discharged, ulceration ensues, and sometimes lays bare an extensive surface: the limbs become œdematous,—the cellular or areolar tissue mortifies over those points of bone unavoidably pressed upon by the bedding,—the entire skin becomes white, dry, and furfuraceous, and anasarca is formed. The progress is soon told. The phosphatic diathesis is established. In protracted cases, renal calculi are formed and passed, life is prolonged, but the patient is cut off from the fellowship of life, and death calls him to his account by means of dropsy, paralysis, or coma.

Brighton, August 6, 1847.

ON THE CIRCUMCISION OF FEMALES IN WESTERN AFRICA.

By W. F. DANIELL, Esq.

INTELLIGENT travellers have distinctly pointed out among barbarous nations, in different portions of the globe, faint traces of a descent from progenital sources, the elevated moral and physical characters of which are widely at variance with their modern condition and prospects. This retrogression from a superior intellectual and social

position into the depths of profound barbarism has been referred to manifold causes. Apparently the most prominent are those gradual changes induced by the intervention of time, the dispersion and extinction of their primitive stock as a parent stem, and the detachment and consequent isolation of the successive offshoots from it, owing to their nomadic tendencies, and other circumstances, which contribute to still further their separation. The customs and modes of life also (from the diffusion and probable blending of these branches with other communities less civilized) have imperceptibly led to the deviation from their original characteristics, for, in proportion to the repeated migrations and fixed settlements in countries widely apart, these alterations have proceeded to such an extent, that at length, with the exception of a few occasional traces, a permanent obliteration of the whole has been accomplished.

Historical fragments of past ages will furnish us with instructive proofs of the rise and decadence of numerous empires, whose intimacy with the arts and sciences were such as denoted no limited proficiency in the cultivation of them, and from the scattered remnants of which we may recognize how far the tide of civilization had advanced. The records of their existence will be found either in the pages of some contemporary writer, or, as above, in the peculiarities of those degenerate tribes who have descended from them. The retention and warm attachment to such modified customs has been well exemplified in many of the national traits that distinguish the natives of Western Africa; their exploration, therefore, may not unfrequently bring to light some of those vestiges of science which, although partially concealed under the garb of savage life, still afford abundant indications of an origin from an intelligent and more civilized race of people.

What is usually implied by the expression of the term circumcision in reference to women, is merely the excision of the clitoris, and other organic structures connected with it. The excisive process is not restricted to one particular part, but is more or less varied in conformity with the usages of the different countries in which it is promoted. Under these

modifications, it may be classed under four heads, viz.—

1. Simple excision of the clitoris.
2. Excision of the nymphæ.
3. Excision of both nymphæ and clitoris.
4. Excision of a portion of the labia pudendi, with either or all of the preceding structures.

The circumcision of females is the ostensible remnant of some of those mysterious orgies which derive their origin from the remote periods of antiquity. Its history, therefore, is necessarily involved in deep obscurity, for as all the information to be gleaned on the subject is from its bare allusion in a few of the treatises of the early historians, it is of course but scanty. That it was secretly inculcated as one of those gloomy rites which the female proselyte had to undergo, as a preliminary measure, prior to her initiation into those dread mythological creeds, which in Egypt and the adjoining countries were swathed in the folds of an allegorical and almost impenetrable mysticism, is the most likely inference. Eventually the progressive decay of these religious institutions gradually led to its promulgation and practice among the masses of the people, for the priests who, independent of their scientific attainments, were also well versed in medicine, might have advocated its use both in a moral and hygienic point of view as conducive to the welfare of the female population. Mention is made of this singular custom in the pages of Strabo, the father of geography, and also by Pliny and others. The former remarks, that it was generally performed among the Egyptians, who were at that period a far more enlightened people than the surrounding hordes. He states:—

“Καὶ τοῦτο δὲ τῶν ζήλουμένων μάλιστα παρ’ αὐτοῖς (τοῖς Αἰγυπτίοις), τὸ πάντα τρέφειν τὰ γεννώμενα παῖδια, καὶ τὸ περιτεμεῖν καὶ τὰ θηλεᾶ ἐκτεμεῖν. Ὅπερ καὶ τοῖς Ἰουδαίοις νόμιμον καὶ οὗτοι δὲ εἰς Αἰγύπτου.”*
Now, in this passage, to prevent any ambiguity that might arise in confounding this with the ordinary rite of male circumcision, he has discriminately applied the word ἐκτεμεῖν, to excise, in order the more clearly to illustrate his meaning. These dis-

* Strabo, lib. 17, p. 294.

unctions are fully dwelt upon by Dr. Browne and Burkhardt, both of whom had extensively travelled in Northern Africa.

The first, and least objectionable, of these operations, is the one almost universally selected by those nations where such curious customs are permitted. It is fortunately not accompanied by any dangerous symptoms, a moderate febrile irritation, with painful tenderness and profuse suppuration, being the common termination. Whenever a lack of skill or manual dexterity prevails on the part of the operator, it assumes a more serious aspect, violent inflammation and sloughing of the circumjacent textures frequently supervening. This process is mostly carried into effect before puberty, but the age of the person is no obstacle to its completion should such be thought necessary. In Eboe, Old Calabar, and other parts of Western Africa, it occurs between the years of four and nine,—much, however, will depend in these cases on the locality, and the purpose for which it is intended. When in Calabar river, I had an opportunity of witnessing the mode of operation undertaken there, as elsewhere, by aged females. The girl having been placed on the knees of a woman, with the legs apart, the clitoris was diligently sought out (for in this, as in other subjects of tender age, from imperfect development it was sometimes difficult of detection), and upon discovery was seized forceps-like by two pieces of bamboo, or palm sticks, gently drawn forth, and severed by means of a sharp razor. The hæmorrhage was rather copious, but it was suffered to exhaust itself. Afterwards the parts were alternately bathed with warm and cold water, and the girl placed in the recumbent position. The surface of the body was then dotted over by some fetish preparation to avert the molestations of any malignant influence, and in two or three days the little invalid was restored to her usual occupations. The clitoris here is termed *Yientra*, and its continuance in females approaching maturity is not unfrequently deemed a cause of reproach. This peculiar observance is popular in various parts of Arabia, Darfour, Kordofan, and among the Galla tribes of Abyssinia; also in several of the kingdoms of Soudan, in

the Foulah and Mandingo countries, and in the Eboes of the Quorra, and the populations of those rivers connected with them.

The second division, or removal of the nymphæ alone, is rarely attempted on the same grounds as the previous operation: it is resorted to more as a surgical measure in those morbid states where the structure is the seat of hypertrophy or fungoid enlargement and to which negro females are liable, either from excessive indulgence in venery, or from constitutional predisposition.

The excision of these organs in conjunction with the clitoris, though rather less common, is maintained in many of the countries where similar ordinances are instituted and upheld. In general, it is effected at the desire of the woman herself, either in complaisance to the hereditary customs of the family to which she belongs, or to the arbitrary caprices of her superiors, and as a means of ingratiation into the favour of her liege master, who may allude to its consummation as a proof of her devotion to his wishes; not that this latter event is dependent on her option, for in the African code of domestic regulations, it is freely understood that the hints of a husband are tantamount to law. 'Social life, in most of the pagan towns of Western Africa, is darkened by scenes of the grossest demoralization, and its annals teem with pictures of such a licentious and depraved character, that a narrative of them would scarcely command credibility. An illicit and promiscuous sexual intercourse is constantly carried on by nearly all classes of slave subjects, who, not fettered by any moral obligations, and solely intent on the gratification of their passions, give them an unrestrained rein long before the age of puberty. In the younger branches of families more immediately under the supervision of their chiefs, any dereliction from an established probation of chastity in these respects is punished with fearful severity, both in boys and girls, especially if any of the latter is a favourite domestic, or near relative, since the license is only justifiably allowed in individuals who have attained a proper maturity. The evil effects of this immorality, however, are sensibly felt by those persons who are accustomed to procure

and retail them (i. e. the female slaves,) in the light of a commodity for traffic. Slave merchants of the interior, when they therefore visit the marts for the selection of young females, are amply aware of the laxity of frame and physical deterioration that ensues from the premature development of form in these cases; and by a careful series of manipulations over various portions of the body determine how far they may venture on the price, should the vendor not guarantee their virginity. In spite of the most stringent precautions, a clandestine intercourse is more or less prevalent among the sexes, from the opportune temptations afforded them; therefore, for the prevention of these delinquencies, the cruel and painful process (the concluding division) is had recourse to.

Dr. Brown, who resided some time in Darfour, North Africa, has given the first account of this operation. He remarks that the clitoris is cut off at the age of 8 or 9 years, and the term employed for denoting the performance is *Chafadh*, while the appellation conferred on the person who operates is that of *Chafadhah*. The object of the first excision is for the purpose of "producing an artificial impediment in the vagina, to prevent sexual intercourse, in order not to impair the value of the slaves. This operation, like the former, is performed at all ages, from 8 to 16, but commonly from 11 to 12. * * * The operation was performed by a woman, and some of them complained much of the pain both at and after it: they were prevented from locomotion, but permitted to eat meat. The parts were washed every twelve hours with warm water, which profuse perspiration rendered necessary. At the end of eight days, the greater part (of those operated upon) were in a condition to walk; and, liberated from their confinement, three or four of them remained under restraint till the thirteenth day."* Dr. Browne, however, does not appear to have thoroughly understood the details of this operation, inasmuch as the solitary excision of the clitoris is no obstacle to copulation, unless some of the adjoining textures have been removed with it.

Burekhardt, in allusion to this subject, observes,—“Among the slave-

girls who arrive at Shendy and Siout, there are several who are called *Mukhaeyt*, (consuetæ) from an operation which has been described by Mr. Browne,” and that many females of Arab origin, inhabiting the “Western bank of the Nile, from Thebes as high as the Cataracts, and generally those of all the people to the south of Senne and Esne, as far as Sennaer, undergo circumcision, or rather excision, at the age of from 3 to 6 years. Girls thus treated are also called *Mukhaeyt*, but their state is quite different from that of the slave-girls just mentioned.”*

In some of the countries of Western Africa, another and more inhuman barbarity is perpetrated on girls of high birth, who have been guilty of prostitution, and is often succeeded either by a partial agglutination of the vaginal membranes, or a permanent obliteration of the canal. It consists in the introduction into the vagina of the unripe pods of the *capsicum frutescens*, or bird pepper, beaten into a soft mass, so that, from its acrid principle, a greater amount of suffering may be inflicted, in order to deter the fair debauchee from committing any further excesses. The pain from the active inflammation thus induced is of the most severe character. I was informed by one of the principal inhabitants of the comparatively civilized town of Clarence, Fernando Po, that this course of punishment is now and then had recourse to, to check any similar irregularities on the part of the female.

During my stay in those pagan towns where female circumcision is supported, I have frequently attempted to procure information of its early origin, but without success; the invariable answer to my queries was, that it had been

* He remarks that results of the former operation are as follows:—Cicatrix post excisionem clitoridis parietes ipsos vaginæ, foramine parvo relicto, inter se glutinat. Cum tempus ad nuptiarum adveniat membranam a quâ vaginæ clauditur, coram pluribus pronabis inciditur sponso ipso adjuvante. Interdum evenit ut operationem efficere, nequeant sine ope mulieris aliquæ expertæ quæ scalpello, partes in vaginâ profundius rescindit. Maritus crastinâ die cum uxore plenunquæ habitat, unde illa Araborum sententia, *Leilat ed-dokle messel leilat el fatouh*, i. e. post die aperturæ, dies initus. Ex hoc consuetudine fit ut sponsus nunquam decipitur ex hoc fit ut in Egypto superiori in nuptiis repulsare lascivias hominem parum student dicentes, *Tabounny wala takergany*, sed quantum eis sit unita hæc continentia post matrimonium demonstrant libidine quam maxime indulgentes.”—*Travels in Nubia*, p. 331-2.

* Browne's Travels in Africa, p. 347.

transmitted to them from their forefathers, and further than this they knew not. Some chiefs, indeed, have told me that it was intended to do away with those criminal liaisons which are apt to occur where a number of females are congregated under the roof of one man. I am, however, very sceptical as to the truth of this explanation, although it may be admitted as one of the causes of its present toleration.

There is, I think, sufficient grounds for the assumption of the belief, that in past ages, among more civilized communities, it constituted no unimportant branch of medical hygiene, and that probably, at some future period, fragmentary data may more explicitly unfold the use and purport of this singular custom,—one among the many that has been faithfully preserved by the African races through the lapse of centuries, from a source so distant and mysterious, as almost to set at defiance the researches of the most profound inquirer.

THE PHYSIOLOGICAL CHARACTERS OF THE SERUM IN HEALTH.

In the following observations the composition of the serum in health was estimated by analyzing it in nineteen individuals, eleven of whom were males, and eight females. The serum, after being dried, was washed with warm distilled water to remove the extractive matters and salts, and then digested in alcohol at 97° F. to remove the fatty matters. The serum in these cases varied in its relative quantity. It was usually of an orange-yellow colour, and of tolerable consistence. In all cases it was decidedly alkaline, sometimes limpid, but frequently turbid, either from the presence of globules or of albuminous fragments. Its specific gravity varied somewhat in the different cases; in the serum taken from nine of the men, the density varied from 1028·5 to 1027, the mean being 1027·7: in the eight females, it ranged from 1028·6 to 1026·6, the mean being 1027·4, and consequently almost the same as in males. The extremes of the solid residue of 1000 parts were 95·5 and 85·5. The following table may be regarded as representing the composition of 1000 parts of normal serum:—

Water	910
Pure albumen	80
Extractive matters and salts.	8
Fatty matter	2
	1000

Dr. Day's Report on Chemistry, 1847.

ON THE CONSTRUCTION OF THE PLACENTA, AND THE MODE OF COMMUNICATION BETWEEN THE MOTHER AND THE FŒTUS IN UTERO.

By FRANCIS ADAMS, LL.D., Surgeon,
Banchory.

[Continued from page 292.]

FROM what we have stated, it will be remarked that the views of Harvey, Haller, and Hunter, respecting the construction of the placenta, differ in the following respects. Harvey and his followers held that the placenta consists entirely of ramifications of the umbilical arteries, with a peculiar substance to support them, enclosed in a fold of the chorion, so that the placenta is entirely separated from the uterus, and all connexion between the maternal and fœtal parts is through their investing membranes. Haller held the same views with Harvey as to the vessels which compose the placenta, but he supposed the arteries and veins to terminate on the surface of the placenta by blunt extremities, and there to inosculate with the veins and arteries of the mother. The Hunters and their followers held that the placenta consists mainly of fœtal vessels, but partly also of maternal, united together by means of certain cavities called placental cells, through which an interchange of blood takes place between the mother and fœtus. It is to be further remarked, that the peculiar views of the Hunters rest entirely, 1st, upon a single dissection of an injected uterus made by J. Hunter; 2d, upon certain anatomical preparations preserved in their museums; and 3dly, upon the appearances remarked on the uterine surface of fresh placentæ. It is not my intention at present to enter upon the consideration of the merits of the case thus made out by the Hunters in favour of this hypothesis, further than to remark, that I believe it will turn out, as we shall see by and by, that injections of so tender an organ as the placenta are extremely fallacious; and that the appearances described by the Hunters as being seen on the uterine surface of the placenta, are very different from those which Malpighi, Munro, and

Boerhaave had described, and from those which I myself have observed.

The doctrine of the Hunters, however, under the authority of their great name, soon superseded all others, and for more than half a century it may be pronounced to have been the established creed of the profession. Mr. Copeman, in his reply to my papers on Flooding, in the *MEDICAL GAZETTE*, has adduced a long list of distinguished names in support of it (Nos. 965, 966): and I readily admit that he could easily have swelled out his list to a far greater extent. Indeed, before Dr. R. Lee, who published his objections to the Hunterian hypothesis in the *Philosophical Transactions* for the year 1832, I am not aware that a single individual had ventured to call it in question. Of his remarkable paper "On the Construction of the Placenta," I have now to give a very brief abstract. He states that his observations are the result "of the examination of six gravid uteri and many placenta, expelled in natural labour, which seem to demonstrate that a cellular structure does not exist in the placenta, and that there is no connection between this organ and the uterus by great arteries and veins." He declares that, on detaching the placenta carefully from the uterus,

- "there is no vestige of the passage of any great blood-vessel, either artery or vein, through the intervening decidua from the uterus to the placenta, nor has the appearance of the orifice of a vessel been discovered, even with the help of a magnifier, on the uterine surface of the placenta; and further, "that no cells are discernible in its structure by the minutest examination." He argues against a vascular connection between the uterus and placenta, from the surface of the latter appearing "uniformly smooth, and covered with the deciduous membrane, which could not be the case did any large vessels connect it with the uterus; and from the circumstance that in the majority of cases it is separated with the least possible force, and without hæmorrhage." He further gives an analysis of all the preparations in the Hunterian Museum at Glasgow, which were supposed to demonstrate a connection between the uterus and placenta, and shows, on the testimony of two intelligent friends, who had examined them for this purpose at his request, that

none of them warrant the inference which the Hunters and others had drawn from them*. He therefore holds that "the facts stated warrant the conclusion, that the human placenta does not consist of two parts, maternal and fetal; that no cells exist in its substance; and that there is no communication between the uterus and placenta by large arteries and veins."

Such were the conclusions respecting the structure of the placenta which Dr. Lee had arrived at in 1832. But in 1842, he declares that "the discovery of the circulation of the maternal blood in the placenta, made by the Hunters, which throws so much light upon the whole economy of the fœtus, especially the processes of respiration and nutrition, will be regarded in all future ages as one of the greatest that has ever been made in human anatomy, and as second only to the discovery of the circulation of the blood by Harvey" (*MED. GAZ.* vol. xxxi.) From the following extract it will be apparent that he could then, that is to say, in 1842, see, as he thought, the extremities of ruptured blood-vessels on the uterine surface of a fresh placenta, and could satisfy himself of the existence of the placental cells. "If you keep this (uterine) surface of the placenta convex, you can see numerous small tortuous arteries in the decidua filled with maternal blood. Their open mouths are visible at the surface of the membrane, and they soon disappear, after making, as John Hunter describes, 'a twist or spiral turn upon themselves.' These decidual arteries soon terminate in the cavernous structure of the placenta, &c." (*Ibid.*)

I cannot help thinking, that when Dr. Lee published this statement in 1842, it was incumbent upon him to explain how, in his six dissections of the bodies of pregnant women performed ten years before, he had missed seeing "the curling arteries, of the size of crow-quills," passing between the uterus and placenta—how he then

* I may mention in this place that a professional friend of mine, most intimately acquainted with the subject, who has examined the preparations illustrative of the placenta in the Hunterian Collections, both at Glasgow and London, gave me exactly the same account of them. He says decidedly that one would not be warranted in drawing conclusions regarding the structure of the placenta from observations made upon these preparations.

failed to detect the ruptured extremities of the same on the uterine surface of fresh placentæ, and also the placental cells; and by what process he arrived at the discovery of all these parts at the latter period. To me it would have been peculiarly gratifying and instructive if he had done so, for I must say that in 1847 I can perceive no openings of blood-vessels on the uterine surface of the placenta, nor can I discover those cavities which have been called placental cells.

I cannot leave this part of my subject without mentioning that Dr. Lee's paper quoted above contains a letter to him from Mr. Owen, giving a description of dissections made by him confirmatory of the views then held by Dr. Lee. He, too, has since explained all this away, and professed himself satisfied that Mr. Hunter's general views are correct in the main. Contrary even to what, as we shall presently see, is the established opinion of the microscopists, he seems to admit the existence of placental cells.

PERIOD IV. — *Opinions advanced by Dutrochet, Velpeau, and others.*

We ought to entertain a greater feeling of gratitude than I suspect we always do towards our Gallic neighbours for compelling us to see and acknowledge the errors into which the Hunters had led us respecting the absorbents, and for explaining to us the nature of imbibition and transudation through membranes, at a time when we had fairly lost all knowledge of these processes. I agree, indeed, with Liebig (*Animal Chemistry*, 3d edit. p. 165,) that *endosmose* and *exosmose* are little else but different names for *filtration*; but undoubtedly Dutrochet has great merit for having recalled attention to these phenomena in the animal frame, and for having investigated their laws at a time when complete forgetfulness of them had led physiologists into errors of the most serious description. Light having been thus generally diffused over physiological subjects, Dutrochet, Breschet, and Velpeau, naturally thought of reconsidering the prevalent doctrines regarding the construction of the placenta, and the mode of communication between the mother and fœtus. Velpeau's "*Embryologie*" is one of the most important works ever published on this subject, and

therefore I have to regret that I cannot give a proper exposition of his peculiar views without the plates, which constitute its greatest value. I am confident that no one can rise from an examination of these plates without coming to the conclusion that if they are carefully and faithfully executed, as there is every reason to suppose they are, it is impossible to resist the conclusion that the placenta is formed by the extension of the villi of the chorion, and consequently that this organ must belong exclusively to the fœtal apparatus. I would refer the reader particularly to plate vii. fig. 1; plate ix. fig. 3; plate xi. fig. 2; and plate xii. fig. 1.

The principal arguments by which Velpeau combats the doctrine of the Hunters, that the placenta is supplied with blood-vessels from the mother for the purpose of conveying blood to the fœtus, are the following:—1st. In extra-uterine pregnancies such an arrangement is impossible. 2d. The placenta at first does not exist, and even until the third month it consists of agglomerated filaments only, and consequently no sinuses can exist between its lobules. 3d. A regular-formed placenta has been found in connexion with a fibrous polypus and hardened portion of the womb. 4th. Velpeau has seen the uterine surface of a recently delivered female, hard, leathery, and without orifices. (See further, *Edinburgh Med. and Surg. Journ.* No. 118, p. 174.) Velpeau gives two figures from the great work of W. Hunter, in illustration of the peculiar views of the latter, with some interesting observations of his own. (See *Embryol.* plate ix. fig. 5, 6.) Of these the one he does not hesitate to declare "is formed entirely from the imagination;" and in the other, what Hunter gives as the natural orifices of vessels on the surface of the decidua lining the placenta, he holds to be mere lacerations,—"sont de simples lacerations, au lieu de constituer des orifices naturels comme le croit l'auteur."

To this head may be referred the description of the placenta given by Mr. John Dalrymple, of London, which is highly deserving of notice, as being perhaps the most lucid, precise, and accurate description of the organ, as usually presented to us at the

full period of gestation, which is to be found in the whole compass of medical literature. The following extracts will enable the reader to comprehend his general views:—"The umbilical arteries, after dividing and passing on in a convoluted and serpentine form over the foetal surface of the placenta, dip at various intervals into its substance, there dividing and subdividing infinitely. The trunks are covered on the surface of the organ by the foetal membranes, and each branch, as it dips into the thickness of the tissue, carries before it a fold of the chorion."

"The whole mass of the placenta is made up of the innumerable ramifications of the arteries terminating in beautiful coiled and convoluted capillaries, which form tufts or bouquets at various intervals; these finally become continuous with the minute origins of the umbilical vein, which returns to the fœtus in the same direction that the arteries left, viz. coiled and twisted in the umbilical cord." "The chorion constitutes by division into processes true villi, and each villus contains a tortuous capillary, which, entering from the arterial side, leaves by the venous." "The uterine surface of the placenta is covered by decidua." "There are no distinct or defined cells constituting a maternal portion of the placenta." * * The interstices between the villi have been usually but improperly called the cells of the placenta." "In the placenta must go on a double interchange of fluids, for the blood returned to this organ by the arteries is unfitted for a second circulation through the embryo,—at least, this is true in part, if not entirely. Hence, when the blood, or nutrient material of the blood, brought by the uterine arteries, and previously aerated by the mother, enters by *endosmosis* the absorbent capillaries of the foetal villi, that portion of the foetal blood which requires the action of oxygen escapes by *exosmosis*, and returns by the uterine sinuses and veins to the maternal part."*

* I would also beg to call attention to the following observations contained in the same paper:—"It has been observed by some anatomists that the uterine veins are filled by injections thrown in by the umbilical arteries. The explanation of this phenomenon is sufficiently easy; the tufted villi are very delicate, and it not unfrequently happens that the injection bursts the covering of the chorion, and so escapes into the interstices between the villi, which have

This description is so remarkably clear, so devoid of mystification, and, I may be allowed to add, is so much in accordance with my own observations made with the microscope, as to satisfy me that the placenta consists entirely of a congeries of the umbilical vessels, strengthened by some fibrous matter, and enveloped in a fold of the chorion, and having nothing maternal in its structure further than a thin pellicle called the decidua, formed no doubt from a gelatinous exudation poured out by the vessels of the uterus. It agrees so well, moreover, with the above-mentioned descriptions given by Malpighi and Munro, the one two hundred, and the other at least one hundred years ago, that no one can avoid the conclusion that this coincidence cannot be otherwise accounted for but upon the supposition that each of these eminent anatomists described appearances as he had remarked them, and, unlike too many others who have handled the same subject, did not allow his mental vision to be perverted by the mists of prejudice and hypothesis.

And now we find that our investigations have brought us back again at the end of this, the fourth stage of our progress, to exactly the same conclusions as those we had arrived at, at the end of the second stage, namely, that the placenta is altogether a foetal organ, and that there is no vascular connexion between it and the uterus.

PERIOD V.—*Opinions held by the advocates of the cell-theory at the present time.*

There never occurred, I am inclined to think, within so brief a period, such a revolution in any physical science as has been produced in phy-

been usually but most improperly called the cells of the placenta. If the injection so escapes, it will easily find its way, after distending the spongy mass, into the uterine sinuses, and thus fill the uterine veins. On the other hand, coloured fluid thrown into either of the uterine arteries or veins will distend the placenta or spongy interspaces, and if the foetal tufts be lacerated by the distension or force of the manipulation, some of it will enter the broken extremities of the foetal vessels," &c. There is an interesting paper in No. 86 of the Edinburgh Medical and Surgical Journal, on the Maternal Foetal Circulation, by Dr. Williams, from which it appears how very fallacious all attempts to ascertain the minute structure of the placenta by means of injections have generally proved. Dr. Munro's Essay, referred to above, likewise contains many statements and remarks all leading to the same conclusion.

siology lately by the celebrated discovery of Swann and Sneider regarding the functional office of the cell in the formation of all organic substances. A scholar who is conversant with the old atomic theory of Democritus and Epicurus,* who taught that all things are originally formed of atoms, might fancy he saw it revived when he finds that the microscope actually shows that all organic substances are composed of molecules surrounded by thin films, namely, of *nucleated cells*. Few persons who have any pretensions to an acquaintance with natural science can require to be told that all the structures of the animal and vegetable world are now held to be originally formed from these cells. It is also well known with what enthusiasm this discovery was received, and with what eagerness all subjects connected with animal and vegetable physiology have been re-explored, with the hopes of deriving additional illustration to them from the lights generally diffused by this brilliant discovery. It was not to be supposed that the placenta would be overlooked in the general survey, and accordingly it will be found that the Teutonic microscopists were not slow in announcing to the literary world the new discoveries which they had made in this interesting field of investigation. The foremost to distinguish themselves in this way were Weber, Wagner, and Baer, whose descriptions of the placenta certainly form a most extraordinary contrast to those which we have just been considering. I must now endeavour to convey to the reader, with as much brevity as I can, a distinct notion of the views lately promulgated by Weber with regard to the construction of the human placenta. (See Wagner's Physiology, by Dr. R. Willis, Note, p. 200—206.)

He illustrates his idea of the placenta by the following comparison of it to a sponge: "The fibrous tissue of the sponge corresponds with and represents the branching subdivisions of the chorion, and their uniting medium derived from the decidua; the cavities and interspaces of the sponge, however, represent the passages in which the blood of the mother flows * * * The arteries and veins of the uterus open

at once into the spongy substance of the placenta." He says elsewhere (p. 201), "that the arteries and veins of the uterus, the channels of the mother's blood, *penetrate in great numbers into the placenta*, and are distributed throughout its substance in such wise, that every one of its minutest lobules has a canal carrying the blood of the mother, and so comes in contact with the vessels in which the blood of the embryo is flowing. The umbilical vessels of the embryo divide in the manner of a tree, into very numerous and minute branches, which finally turn round, forming loops and anastomoses, and again collect into larger and fewer branches, which at length unite into a single trunk, and form the umbilical vein. *The whole placenta, and therefore every individual lobule, consists of two distinct parts, the one a continuation of the chorion and vessels of the embryo, and the other a continuation of the membrana decidua, and vessels of the uterus.*"* Baer's description is to the same effect: he says, "by the growth of the vessels of the uterus into the *decidua serotina* this is transformed into the placenta. *That vessels pass from the walls of the uterus into the placenta has been long known and admitted*; but in regard to the form and mode of this passage or transference, opinions still vary. *It was long believed with Hunter that they passed into cavities.* In more recent times there appeared a growing disposition to regard these spaces as *enlarged veins with extremely thin walls, a structure which is assigned to them by many others, and particularly by E. Weber.*"† He professes himself

* Wagner's own account of the origin of the placenta is much the same. He clearly derives the origin of it from the *decidua*, that is to say from the uterus (p. 199.)

† The following experiment is the only positive proof stated by Weber in support of his hypothesis: "If the uterine surface of a very fresh placenta, that has not been put into water, be moistened with a strong solution of corrosive sublimate, in alcohol, in order to coagulate and prevent the escape of the blood still contained in it, and the whole placenta be then soaked in a weaker solution of the same kind, the whole of the maternal blood that remained in the spaces between the divisions of the chorion will be found coagulated; even in the larger lacerated veins which have just passed from the uterus into the placenta, coagulated blood will be found; and the manner in which these veins open into the interspaces mentioned, will be seen, and the course of the maternal blood during life be found indicated." I have repeated this experiment with the utmost possible care, but have failed to detect the appearances described by Weber.

* See in particular Diogenes Laertius, in *Vita Democriti*; and Lucretius, *De Rerum Natura*.

inclined to agree with Weber, but owns that since he had become acquainted with Dr. R. Lee's views "he had had no opportunity of appealing to nature for a solution of the question." Weber, in like manner, although he delivers his extraordinary account of the placenta in a strain of the greatest self-confidence, artlessly lets it out that, "*Seiler believed himself authorised to conclude that no vessels from the mother penetrate the placenta, but that the maternal vessels only come into contact with the surface of the placenta where it is bounded by the uterus.*" Since, then, it would appear that one portion of the German physiologists hold that the placenta is mainly formed from the vessels of the mother, while others maintain that the uterine vessels do not enter into the structure of it at all, it must surely be admitted that professional opinions in Germany, on this important subject, are at present in a very unsatisfactory condition." We shall turn our attention, then, to the examination of what has been doing in this department, of late years, by the microscopists of our own country.

[To be continued.]

ON THE AMOUNT OF SULPHUR AND PHOSPHORUS EXCRETED IN AN UNOXIDISED STATE.

FROM a series of well-devised experiments on these subjects, Dr. Ronalds concludes that from three to five grains of sulphur pass off daily by the urine in some other combination than as sulphuric acid, and that these three to five grains amount to about one-fourth of the whole quantity of sulphur excreted by the kidneys. In what state the sulphur exists, Dr. Ronalds has been hitherto unable to determine. He has ascertained, however, that the precipitates produced in urine by neutral and basic acetate of lead, after the separation of the sulphates by barytes, and the colouring matter obtained by Scherer, contain only traces of this constituent, and that it is almost entirely found in the liquid containing the urea, which remains on the separation of the precipitate by basic acetate of lead. As Dr. Ronalds has instituted comparatively few analyses with the view of determining the phosphorus, and is understood to be still prosecuting this subject, we shall defer any further notice of his investigations to our next Report."—*Dr. Day's Report on Chemistry, 1847.*

MEDICAL GAZETTE.

FRIDAY, AUGUST 28, 1847.

OUR readers will probably remember, that in January last, Mr. Duncombe, as a member of the House of Commons, brought forward certain charges of cruelty and neglect against the medical officer of the Hulks at Woolwich.* Eight cases were specially enumerated; and after entering into the most revolting details respecting them, the honourable gentleman said that "conduct more brutal (than that of Mr. Bossey) could not possibly be described or conceived." Before proceeding to lay before our readers the result of the recent investigation instituted by Government, we are desirous of putting on record some other statements made at this period by Mr. Duncombe. It is not a question which affects Mr. Bossey merely, but it involves all those members of the profession who have the misfortune to hold Government appointments. They will perceive, as we stated in our former article, how easily the reputation of a medical officer may be damaged,—nny, irretrievably ruined, by privileged *ex parte* statements;—and how little he can hope for redress in the event of his innocence being proved,—either from the "honourable" member who acts as accuser, or from the Government, to whom he has a right to look for protection.

During the discussion which took place in the House of Commons on the 29th of January last, Sir George Grey expressed his disbelief that a gentleman, holding the office of surgeon, could be guilty of the conduct which had been alleged against him; and another honourable member, probably

* See our last volume, p. 298.

having some misgivings from the result of former popular accusations made by Mr. Duncombe, said that the "honourable member for Finsbury was occasionally in the habit of making *ad captandum* statements, which, upon investigation, did not appear to be so well founded as they ought to be." This, as we shall see hereafter, was a very mild parliamentary way of suggesting a doubt respecting the truth of Mr. Duncombe's charges; and the necessity for this caution in receiving *ex parte* statements, has been, we think, most fully justified by the evidence given at the recent investigation. It was intimated to Mr. Duncombe that there should have been a private communication with Government in the first instance, in order that the matter might be inquired into, before grave charges, involving ruin to the reputation of a medical officer, were publicly made in a privileged place, and circulated in a privileged form by what are called "the ordinary channels of information":—but this does not appear to have suited the purpose of the hon. member. He said, "all that the house had a right to require from a member was, that he should make out a *prima facie* case for inquiry: if the inquiry failed to substantiate his statement, the disgrace must rest with him." * * *

An hon. member (Sir W. James) had alleged that his statements were not borne out by facts, when they were submitted to investigation. "Now no one could take more pains than he did, to ascertain the truth of the cases which were brought before the house." On a subsequent occasion we find the honourable gentleman using the following language: "he could say, with regard to the statements he felt it his duty to make to the house, that he had understated his case (hear, hear)—that a complaint was made against him that he had only half-stated the cruelty

with which those persons were treated."

* * * He repeated, "he was prepared to prove all he had stated as to the treatment of those convicts, if the house would give him a committee, or put him on a commission of inquiry fairly, honestly, and impartially constituted, to investigate the case." Waiving, for the present, the question whether a commission can ever be fair, honest, or impartial, at which an accuser, who has already prejudged a case, is allowed to be present as one of the judges, we shall proceed to try Mr. Duncombe's allegations by his own standard. Medical men who hold government appointments will thereby have a good opportunity of learning what is the Parliamentary *prima facies* of a case for inquiry into the professional treatment of their patients. The physicians and surgeons of our numerous prisons and Poor Law Unions may hereby learn to appreciate the true nature of one branch of Parliamentary privilege,—i. e. of circulating, by means of the daily press, charges which, if published by members in their private capacity, would infallibly expose them to an action for libel with the certainty of heavy damages,—and of escaping scot-free from all responsibility in the event of these charges turning out to be false and unfounded. An hon. member has only to volunteer to take upon himself "the disgrace" that would result from a failure in substantiating his statement; he has only to declare that he had understated his case—that he had but half-stated the cruelty, &c.: the daily press, privileged in this respect, has then merely to circulate the libellous charges; and when the Parliamentary report is published, the honourable accuser and the daily press have only coolly to pass the matter over without apology, retraction, or explanation, and the matter is at an

end! The public think much more of the charges originally made, than of the disgrace which ought to fall on the person who fails to prove them, or of the unfair dealing of the conductors of those journals who circulate the libels, but refuse to do common justice by publishing the results of a Government inquiry.

In entering upon this question, we wish to state at once, that the Government report shews the necessity for great improvements in the medical and moral management of the convicts at the Hulks. It would be altogether foreign to our purpose to examine the copious details which are here spread over 509 folio pages, and are comprised in the answers made by the various witnesses to 13,326 questions! This is not the question before us. We have at present merely to deal with Mr. Duncombe's charges against the medical officer, Mr. Bossey. On a former occasion*, before this inquiry was commenced, we stated our firm conviction, from the *prima facies* of the case upon which Mr. Duncombe relied for a contrary result, that the medical officer would be able to prove that these charges were false, scandalous, and unfounded; and that his secret accuser (a discontented convict) was not a person upon whose testimony any Court of Justice, or Committee of Inquiry, would rely. We shall leave our readers to judge how far our predictions have been borne out by the official report.

We may premise that Captain Williams, the Inspector of Prisons, who was appointed to conduct this inquiry, was evidently, from the report, much more favourably disposed to Mr. Duncombe than to Mr. Bossey. While he admits that the charges are unfounded, and therefore that Mr. Bossey has been most unjustly accused, he, as it appears

to us, goes out of his way as a judge, to compliment Mr. Duncombe, "for the courtesy and deference personally evinced to him!" Mr. Duncombe was allowed to watch the case for the prosecution, and to examine and cross-examine witnesses as he pleased. The medical officer was no match for his accuser in this respect; and Captain Williams sternly refused an application made by Mr. Bossey to be permitted to employ counsel; although the whole case rested upon the *credibility* of witnesses and the consistency or inconsistency of their statements! It must be obvious that an astute man, by no means unacquainted with the technicalities of the law, and possessing the power of selecting his witnesses and arranging the evidence in the best light, would have an immense advantage over a professional man wholly unskilled in these matters. Sir George Grey and Captain Williams conceded every possible advantage to Mr. Duncombe, by allowing him, not only a full power of examining any witnesses he pleased in his own way, but of calling for books, papers, records, returns, and even of *suggesting* any matter of inquiry! If, with all these advantages, he was obliged to abandon his statements one after the other, and his principal witness and convict-correspondent, *William Mawman Brown*, was, in the end, proved guilty of falsehood and malicious misrepresentation, we think it must be pretty clear that the *prima facies* of a case for a parliamentary charge tending to ruin the reputation of a medical officer may be very slight indeed!

The first part of the case which we propose to examine, is that in which Mr. Bossey was accused by Mr. Duncombe with falsifying the medical returns of mortality. In his place in Parliament, on the 28th January last, the hon. member said—

* Vol. iv. N. S. p. 237.

"From all the reports which he (Mr. Duncombe) had received, it appeared that the cruelty exercised was so excessive, the medical treatment was so brutal, the manner in which the prisoners were treated when alive, as well as when dead, was such, that it was utterly disgraceful to a civilised and Christian country. Credit was taken in the returns for a mortality in 1845 of only 11 prisoners from Milbank Prison, which was contrasted with the mortality in the Penitentiary of Philadelphia and in Milbank Prison. But, from a return which had been laid upon the table of the House that morning, it appeared that instead of 11 prisoners dying in 1845 on board the *Warrior*, which was a convict ship as well as the *Justitia*, there were 28 who died in that year from Milbank Prison alone. Yet Mr. Bossey took credit for the smaller number. How did it happen that such a case as this had not been discovered before?"

We need hardly say, that to publicly charge a medical officer, employed under Government, with misstating in his official returns, the mortality among those who were placed under his care, is about as grave an accusation as could well be made. This matter was fully inquired into, and Captain Williams reports upon it in the following terms;—

"This allegation, attributing a wilful misstatement of the mortality to Mr. Bossey, is unfounded: it has its origin in a *misapprehension* on the part of Mr. Duncombe, of the Reports made by Mr. Bossey to the Superintendent, dated January 24, 1846, the particulars of which will be found at page 373."*

On turning to page 373, we find the facts clearly enough detailed, easily intelligible to one who has only an ordinary acquaintance with decimals and statistics; and it is stated by Mr. Bossey in his evidence,—“Mr. Duncombe has since accepted my explanation of its correctness.”

We have here a specimen of the pains

* Report, p. xiv.

taken by Mr. Duncombe to ascertain the truth, before making and causing to be circulated through the public press, such a serious accusation. A previous communication with Mr. Bossey, or even with Sir George Grey, would just as easily have removed Mr. Duncombe's misapprehension, as the inquiry instituted by Captain Williams! It is also a fair representation of the mode in which a case may be *understated* in the House of Commons! Some men may, it is true, easily mistake the results of statistical inquiries, and, in consequence, bring charges against others which may prove to have no other foundation than in their own misapprehension of the facts. When, however, they possess the power of working such infinite mischief, by leading to the privileged circulation through the daily press of the most injurious statements, it behoves them to use especial caution in making them; and if perchance they have been led into error, and have thus inflicted injury on a professional man, it appears to us that they are bound in honour to make an ample retraction in as public a manner as the charge was made. Has Mr. Bossey's accuser done this with regard to the alleged falsified returns which were thus proved and admitted by himself, some months since, to be true? The answer is, that in this, as in the other cases which we have yet to bring before our readers, he allowed the session of Parliament to close without acknowledging his mistake, or offering any apology whatever to the medical officer, whom he had thus publicly wronged! The daily press has been silent on the subject, as the popular side of the question appears to be that which supposes that these horrors are really perpetrated by medical men in convict-prisons and poor-law unions! Under these circumstances, it appears to us to be the duty of the medical press to place the facts

in their true light. When a gross injury has been inflicted even upon the most humble member of the profession, he has a right to expect that support against injustice, which it is in the power of the medical press to afford. We shall return to this subject in the following number.

Reviews.

A Treatise on the Structure, Diseases, and Injuries of the Blood-vessels; with Statistical Deductions: being the Essay to which the Jacksonian Prize for the Year 1844 was awarded by the Royal College of Surgeons of England. With numerous Additions. By EDWARDS CRISP, M.R.C.S. &c. &c. 8vo. pp. 354. London: Churchill. 1847.

SINCE the appearance of Mr. Guthrie's *Treatise on the "Injuries and Diseases of Arteries,"* which was brought out in 1830—fifteen years subsequently to the publication of Hodgson's celebrated *"Treatise on the Diseases of Arteries and Veins,"*—a large number of pathologists and practical physicians and surgeons have been actively engaged in investigating and describing the most important diseases and injuries to which the blood-vessel system is exposed. Many new and extremely valuable facts have thus been recorded in the various medical periodicals of Europe during the last seventeen years, which facts no author has, as yet, been enterprising enough to blend into a complete system. This is somewhat to be regretted, as, however valuable and meritorious the present standard works on these subjects may have been at, and for some years after, the time of their publication, they do not represent at all fairly the knowledge now possessed by the generality of pathologists with reference to the diseases of the blood-vessel system; and, indeed, it is now generally understood that many of their leading doctrines are perfectly erroneous. We trusted to find this deficiency fully supplied in the work before us, knowing that its author has been long distinguished for his laborious addition

to pathological research; but we must confess, that, upon perusing Mr. Crisp's treatise, we were disappointed in this expectation: valuable and interesting as it in many respects is, it does not by any means fairly represent the present state of our knowledge with respect to the structural and pathological anatomy of the arteries and veins. This appears to have arisen from the author's having principally confined himself to the results of his own observation upon these subjects,—a plan which, while it has prevented the work from assuming precisely the character of a compilation, has detracted from its utility, without at all adding to its originality. The description of the structures of the arteries and veins is brief, and, in many respects, defective and erroneous. The same remark must also be applied to a certain proportion of the pathological observations contained in the body of the work: those devoted to the morbid anatomy of aneurism are especially curt and imperfect. The arrangement of the subjects discussed in the treatise is also by no means good: this is particularly displayed in the Table at p. 235, in which abstracts of 551 cases of internal and external aneurism, selected from the medical journals, are given without the slightest attempt at arrangement. Such a table might have been rendered highly useful for reference by a simple classification of the cases; but, as they now appear, without any order or distinction, they will be found as little as possible available for statistical purposes. Apart, however, from these faults, Mr. Crisp's treatise presents many features of importance and interest; and we would especially refer our readers to the surgical remarks upon the various kinds of external aneurism: these are chiefly deduced from the table above referred to, and from the writings of modern authors. The following extracts will afford fair examples of this portion of the work:—

"Return of pulsation in the sac after the operation has occurred in a few cases," (reference is here made to seven instances in the Table), "and has arisen probably from the blood finding its way into the sac through other channels than the main trunk. Thus it has happened in high division of the femoral," (two cases referred to), "and also where a large branch communicated with the artery or sac below the ligature. In

many cases pulsation has existed for a few days and afterwards disappeared spontaneously, or by pressure. Case 125 is a good example of the benefit likely to be derived from methodical bandaging in these instances. In the museum of St. George's Hospital I have examined an interesting example of popliteal aneurism operated upon by Sir B. Brodie (May, 1839), in which pulsation ceased in the tumor after the operation: it reappeared in six months, disappeared for some time, and returned again. 'For twelve months the tumor gradually increased, and became as large as an ostrich's egg: it was solid, and no sound nor pulsation could be detected in it. For a time it remained stationary; but a few months before the man's death (which occurred from phthisis in July 1843) the tumor decreased in size. The swelling, which was the size of the head of a full-grown foetus, presented the characteristic layers of coagulated blood observed in aneurisms which have been cured. After the tumor began to increase, several experienced surgeons supposed it to be of malignant growth.' "

The following passage, we believe, contains the most ample information that has been collected relative to the time at which ligatures usually separate, where the large arteries have been secured, in cases of external aneurism:—

"The following is the time of separation of 150 ligatures from arteries tied for the cure of aneurism, nearly all of them spontaneous. The numbers are given as well as the averages, as by this means the reader will be better able to form a correct inference. Fractions are omitted. It must be recollected, that, when a ligature does not come away until a long time after the operation, it is generally separated from the artery, and only retained by the surrounding granulations.

"Common iliac, 18, 35.

"Internal iliac, 21, 42.

"External iliac, 13, 14, 14, 15, 15, 16, 16, 16, 16, 17, 17, 17, 19, 21, 21, 21, 21, 22, 22, 22, 23, 24, 24, 28, 29, 29, 31, 34, 42, 42, 56. Average, 22 days.

"Femoral, 10, 11, 11, 11, 11, 12, 12, 12, 13, 13, 13, 13, 14, 14, 14, 14, 14, 15, 15, 15, 15, 15, 16, 16, 16, 17, 18, 19, 20, 21, 22, 22, 22, 23, 23, 23, 24, 24, 26, 27, 28, 29, 29, 29, 31, 31, 33, 36, 40, 45. Average, 18 days.*

"Subclavian, 10, 11, 12, 12, 12, 13, 13,

13, 13, 13, 14, 15, 15, 15, 15, 16, 16, 17, 17, 18, 18, 20, 20, 20, 20, 21, 22, 27, 31, 43. Average, 17 days.

"Carotid, 8, 11, 11, 13, 14, 15, 16, 17, 19, 19, 20, 20, 21, 22, 25, 26, 26, 26, 31, 33, 48. Average, 21 days.

"Brachial, 9, 11, 12, 12, 13, 16, 18, 28. Average, 14 days."

Mr. Crisp has collected a good deal of interesting information with reference to the influence of climate in the production of arterial disease. The following passage is curious, and should lead to further inquiry upon the subject:—

"*East Indies*.—The following interesting information I obtained from my friend, Mr. C. S. Webber, late Surgeon-Superintendent in the Colonial Emigration Service.

"With respect to the inquiries you wished me to make on the subject of diseased heart and arteries, I am sorry they have not resulted in the acquirement of any positive information; the few facts I have been able to obtain being almost entirely of a negative character. Among the natives here, including the Parsees, as well as the Hindoos, aneurism appears to be, if not altogether unknown, a disease of the rarest occurrence; organic disease of the heart almost equally so. I say, 'almost,' because, in the course of my researches, I met with several cases recorded under the head of 'asthma,' some of which, I suspect, were complicated with disease of the heart, although that question seems to have been left untouched in the details. I twice visited the principal native hospital of Bombay, which is situated (immediately contiguous to the Grant College) at By-cullah, and went over the whole register of cases for the years 1843 and 1844, comprehending for the former year, 2067; for the latter, 2258—total, 4325: among which no record of diseased heart or arteries was found (in the same period the cases of phthisis were 21). The principal medical officer, Dr. Morehead, told me that he could not call a single case to his recollection. The assistant-surgeon, Dr. Peale, assured me that during three years' service afloat in the Indian Navy, with crews of Europeans and natives mingled, he had not seen a case. (Dr. Morehead had some remembrance of having seen aneurism in the native, but very rarely indeed, and could not call to mind any details.) The names of heart disease, or aneurism, do not occur in the Government Forms of Return. I repeatedly visited the European hospital at Bombay (number of beds 150). Dr. Graham, the principal medical officer, informs me, that the diseases in question are, in his experience, of exceedingly rare occurrence.

* It will be observed here, that, out of 54 cases, there was only one in which the ligature actually separated at the precise average period of 18 days:—a forcible illustration of the comparative inutilty of statistical data when drawn from a small number of cases.—REV.

Dr. Peat, the resident surgeon, has had no case under his care during his period of charge. He kindly assisted me in going over the register of cases for about the last twelve months; and, although we minutely examined all suspicious cases, such as fatal attacks of rheumatic fever, with post-mortem inspections, &c., we found no instance of organic disease of the circulatory system. Functional disorder of the heart is not uncommon. Dr. Grierson, of the Lunatic Asylum and Hospital at Colabah (which I visited), confirms the statements previously obtained; and Dr. Burns, K. H., tells me that during five years' experience as Secretary to the principal Medical Board of Western India, he does not remember to have seen a case of aneurism, or organic disease of the heart. Dr. Hunter, of the Queen's Bays, an experienced stethoscopist, who published a paper in the 'Transactions of the Medical and Physical Society of Bombay,' last year, attributes the 'frequency of disease of the heart and large vessels in European troops at Poonah (Western India) to the practice of subjecting the soldier to active duty, whilst closely buttoned up in his accoutrements, thus compelling him to undergo violent exertion, whilst the chest and neck are tightly compressed.'

Mr. Crisp also adduces abundant information to prove that the diseases in question are likewise remarkably rare in the West Indies.

In the above notice we may have appeared to dwell rather more strongly upon the defects of Mr. Crisp's work than upon the features of interest with which it is abundantly fraught; but we could not help regretting that, where the author had devoted so much labour and research to the subject, he had still left some of its most important points in an extremely defective state. Upon the whole, however, this work does great credit to the ability and industry of the writer: it contains many useful facts, but it is susceptible of much improvement; and this, we trust, will be very shortly made in a second edition.

FRACTURE OF THE STERNUM DURING PARTURITION.

DR. RAPHAEL DIEZ reports a case in which fracture of the sternum occurred in a stout female, aged 32, during parturition; and as the result of the violently expulsive efforts of the uterus. The fracture was easily reduced, and the bones kept in place by bandages. In thirty days the woman had entirely recovered from the effects of the accident.

Hospital and Infirmary Reports.

CASES TREATED AT THE WESTMINSTER HOSPITAL.

Reported by

HENRY T. L. ROOKE, House-Surgeon.

CASE IV.—*Strangulated Hernia—Operation—Rupture of the Intestine—Death.*

SARAH HARMAN, admitted into Percy Ward, under the care of Mr. Phillips, April 7th, with a swelling of the left groin, which proved to be femoral hernia; she had been put into a warm bath and the taxis applied previous to her admission. The tumor is hard and tense, and rather inflamed from the taxis. She states that the hernia has been down four days this time, but was reduced when down seven years ago. Her bowels were moved so lately as April 5th. She has no vomiting nor has she had any; her countenance is rather anxious, but not particularly so; she can bear pressure upon the abdomen. Mr. Phillips tried for a short time to reduce the hernia, but without success. Ordered:—*R. Hydrarg. Chlorid. gr. iv.; Pulv. Opii, gr. ½. M. ft. Pil. st. ad.; R Magnes. Sulph. ʒi.; Aquæ Menth. Pip. ʒi. M. ft. Haust. post 3tis horis. sd. et repetatur omni 2dis horis.*

April 8.—Bowels have not been relieved; she has had no sickness or pain in the abdomen; there is slight tympanitis; the tumor presents the same appearance as yesterday. To have an enema of Ol. Ricini.

Afternoon, no effect from the enema.—*R. Ol. Ricini, ʒvj.; Tr. Sassa. Co. ʒiiss.; Aquæ Menth. Pip. ʒiiss. M. ft. Haust. st. sd.*

8½ p.m.—The bowels have been operated upon, the motion consisting chiefly of scybala.

April 9.—She has slept for several hours since the evacuation of the bowels, but since she has been awake is very restless and uneasy; she complains of nausea and pain in the abdomen; the tympanitis increased; her countenance is anxious and pinched. Pulse 120.

At 10 o'clock, vomiting of fecal matter commenced, and continued with scarcely any intermission until 12 o'clock, when it was determined to perform the operation for strangulated hernia.

The operation was performed by Mr. Phillips. On opening the sac no intestine could be discovered; the contents of the sac consisted of a mass of omentum, cemented by adhesions, and it could not be returned; after the stricture which bound down the omentum had been divided, the finger of the operator was passed into the ring without any obstruction.

The wound was covered with a piece of

wet lint, and she was ordered to take the following :—*℞* Spt. Ammon. Arom. $\mathfrak{z}\text{i}$. ; Liq. Opii Sed. $\mathfrak{m}\mathfrak{x}\mathfrak{x}$. ; Mist. Camph. $\mathfrak{z}\text{ss}$. M. ft. Haust. st. sd.

3 o'clock.—The vomiting has not ceased; the anxiety of countenance still continues; there is pain in the abdomen, and tympanitis. Pulse 120, weak.—*Forus, Terebinth. st. ℞* Opii, gr. $\frac{1}{2}$; Hyd. Chlor. gr. ij . M. ft. Pil. 3tis horis sd.; Spt. Vini Gallici, $\mathfrak{z}\text{ss}$. 2dis horis sd.

10 o'clock.—The bowels have not acted; the sickness still continues; the omentum has become gangrenous.

April 10.—No change for the better.—*Enema Terebinth. c. Ol. Ricini, st. sd.*

The enema has relieved the tympanitis; some scybalous matter has been evacuated by the bowels; the pain is diminished, and the countenance more cheerful. Pulse 104.

11th.—The sickness still recurs; in other respects the same.—*Rep. Enema. Pil. st. Spt. Vini Gallici.*

12th.—This morning a rupture of the intestine has taken place; fecal matter has been discharged from the wound; all the symptoms are improved. Pulse less frequent (90); the vomiting has ceased; she has eaten an egg and taken some tea and toast; the pills are to be omitted; Spt. Vini Gallici to be continued.

April 13.—She has had two evacuations by the wound yesterday, and her countenance is much more lively; complains of feeling very weak.—*Ordered an egg for her tea, and Brandy $\mathfrak{z}\text{ss}$. 2dis horis.*

14th.—The feces pass entirely by the wound; her health is improving; she has had no vomiting; her appetite is good, and her expression cheerful.

26th.—Since the last report no fresh symptoms have appeared, but she has become very much emaciated, and is evidently sinking; her motions have passed regularly by the wound.

April 28.—She died at 2 o'clock, p.m. of the 26th.

Secutio Cadaveris.—The body is much emaciated; the wound presents a gangrenous appearance. On opening the abdomen, there was slight vascularity of the peritoneal coat, not amounting to inflammation; there were adhesions of the intestines around the femoral canal. The rupture of the intestine had taken place about the middle third of the ilium. The colon was much distended with flatus: the other organs of the body were not examined.

CASE V.—Compound Fracture of both Legs—Primary Amputation of the Left—Secondary of the Right—Death.

John Payne, æt. 35, was brought into the Westminster Hospital, May 22d, with a compound fracture of both legs.

The left leg was fractured about three inches above the ankle; the tibia protruded through an extensive lacerated wound: there was another fracture of the tibia about the middle third. There was a compound fracture of the right leg, about the same distance above the ankle as the left; the integuments below the knee were much lacerated, also the outer part of the lower third of the thigh.

The patient on his admission was in a state of great collapse from the shock, but his fellow-workmen said he had not lost much blood. According to their account, the accident occurred from a piece of mahogany, of about two tons weight, slipping off the truck on which it was placed, and jamming him against a similar piece.

Some brandy and water was administered, and it was determined to amputate the left leg below the knee, and to give the right leg a chance.

Amputation by the circular operation was performed by Mr. Phillips at a quarter-past 1 o'clock. Four ligatures were applied.

2 p.m.—He has been very sick; pulse 140, fluttering. He says that he feels giddy from the brandy.

3 p.m.—There has been some hæmorrhage from the stump: the sutures were removed, and a small vessel secured. He says he feels very faint.—*℞* Spt. Ammon. Arom. 3j.; Mist. Camph. $\mathfrak{z}\text{ss}$. M. St. sd.

5 p.m.—He says that he is better; re-union has taken place; the sickness still continues at intervals; he complains much of his right leg.—*℞* Liq. Opii Sed. $\mathfrak{m}\mathfrak{x}\mathfrak{x}$. ; Spt. Ammon. Ar. 3j.; Mist. Camph. $\mathfrak{z}\text{ss}$. M. St. sd.

6 p.m.—He has just fallen asleep.

Half-past 9 p.m.—He has slept about an hour. There has been no more hæmorrhage: stump was dressed.—*R* Ammon. Sesquic. $\mathfrak{z}\text{j}$. ; Sol. Morph. Mec. $\mathfrak{m}\mathfrak{x}$. ; Aquæ, $\mathfrak{z}\text{ss}$. M. Ft. haust. c. Acid. Tart. $\mathfrak{z}\text{j}$. in statu effervescent sd.

May 23d.—He has slept about three hours; pulse 120; tongue clean; skin moist; the stump is free from pain; the right leg is very painful, and it presents a very unfavourable appearance; the foot is oedematous, and there is an evident tendency to gangrene.—*Ordered porter, and beef-tea.*

9 p.m.—His pulse has increased in power.—*To leave off his Ammonia, and to take simple Mist. Efferves. : also, ℞* Liq. Opii Sed. $\mathfrak{m}\mathfrak{x}\mathfrak{x}$. ; Mist. Camph. 3j. M. Ft. haust. st. sd.

24th.—He has slept a little, but he complains very much of the right leg: it was examined, and mortification was found to have attacked it. A consultation was held, and it was considered advisable to remove the limb above the knee. Four ligatures

were applied, and, owing to the weak state of the patient, the femoral vein, which bled profusely, was also secured. For an hour after the operation he was in a great state of collapse; the pulse was scarcely perceptible at the wrist; vomiting excessive. It was not deemed prudent to remove him to the ward till evening.

2 P.M.—The sickness still continues; jactitation, wandering; pulse 160; respirations 40.

3 P.M.—He is rather quieter; the sickness has diminished. He expresses a wish for some porter, which is his usual beverage.

4 P.M.—He has taken his porter; is dozing. Pulse 140; respiration 36.

6 P.M.—He has slept about an hour; the vomiting has not entirely left him. Has asked for some tea.

9 P.M.—He is much better and quieter; pulse 120; respiration 28; he wishes to be removed into his ward, and to have some gin with his porter. — *R.* Ammon. Sesquic. $\mathfrak{z}\text{ij}$.; Spt. Vini Gallici, $\mathfrak{z}\text{ij}$.; Sol. Morph. Mecon. $\mathfrak{m}\text{v}$.; Aquæ, $\mathfrak{z}\text{iss}$. M. Ft. haust. c. Acid. Tart. $\mathfrak{z}\text{ij}$. in statu effervescent. ad.

12, night.—He is very restless; has vomited his medicine.—*R.* Liq. Opii. Sed. $\mathfrak{m}\text{xxx}$.; Spt. Ammon. Ar. $\mathfrak{M}\text{xv}$.; Tr. Card. C. $\mathfrak{z}\text{ij}$.; Mist. Camph. $\mathfrak{z}\text{j}$. M. Ft. haust. st. ad.

25th, 9 A.M.—He has slept about three hours during the night; he says he feels very comfortable, and wishes to have a sole for his dinner. His bowels have not been moved since his admittance.

Half-past 1 P.M.—He has just been seized with great faintness; his face is very pallid. — *R.* Spt. Vini Gallici, $\mathfrak{z}\text{ss}$. st., et repet. p. r. n.

3 P.M.—Much worse: is rapidly sinking. From this time he became rapidly worse, and died at half-past 8 vesper.

CASE VI.—Strangulated Hernia—Failure of the Taxis—Bowels acted after thirty-six hours, from the effect of salines—Tumor much reduced by Cold—The remainder supposed to be omentum.

Elizabeth Delford, æt. 43, was admitted into Queen Anne Ward, March 20th, under the care of Mr. Phillips, with the ordinary symptoms of strangulated hernia.

She states that two days before her admission she violently exerted herself, and, to use her own expression, she felt something give way: this was followed by violent pain in the left femoral region, and she felt a hard unyielding tumor in that region.

On admission she complained of constant sickness, obstinate constipation during the last two days, with much abdominal tenderness and tympanitis.

She was immediately placed in a warm bath, and had a common enema, and attempts

were made to reduce the hernia, but without success. The symptoms were not so urgent as to induce Mr. Phillips to proceed to operation at once. He ordered:—*R.* Magnes. Sulph. $\mathfrak{z}\text{i}$.; Liq. Ammon. Acet. $\mathfrak{z}\text{iss}$.; Aq. Menth. Pip. $\mathfrak{z}\text{vjss}$. M. $\mathfrak{z}\text{i}$. 3tis horis.

Under the use of this mixture the sickness somewhat abated, and after 36 hours, and much tormina, the bowels were relieved. The urgency of the other symptoms also abated, but the tumor remained unchanged.

The bowels were kept under the influence of the saline aperient, and ice was ordered to be applied to the tumor.

Every two or three days a new attempt was made to reduce the tumor, and with partial success; still much of the contents remained; they present very much the character of omentum.

Under this plan, and with as much manipulation as the tumor would bear, she continued for some time, in the hope that low diet, purging, and kneading, would lessen the bulk of the omentum.

After three or four weeks it was determined to try the effects of pressure on the tumor. A cup-shaped truss pad was applied; for a time it produced some uneasiness, but afterwards it was well borne, and the tumor became much softer, and reduced in bulk.

She was employed for a short time in the hospital as an extra nurse, and was then discharged, there being nothing to prevent her returning to her employment.

SULPHURIC ETHER IN THE TREATMENT OF INTERMITTENT FEVERS.

DR. CHALLETON states that he has uniformly succeeded in curing intermittent fever, which has appeared in the neighbourhood of Gannat, by administering half a teaspoonful of sulphuric ether at a dose, either on the occurrence of the shivering fit, or at intervals of four hours on the day before the attack. Several physicians in the neighbourhood have adopted this mode of treatment with satisfactory results.

TREATMENT OF NOCTURNAL COUGH IN INFANCY.

M. BEHREND, of Berlin, has successfully employed for the removal of nocturnal cough in infancy, light purgatives; such as manna or tincture of rhubarb administered in the evening. The effect is aided by the administration of drachm-doses of solution of acetate of ammonia given at bed-time. Small doses of sulphate of quinine have also been found serviceable.—*Gaz. Méd.*, 21, Août.

Correspondence.

PRACTICES OF HOMŒOPATHISTS.

SIR,—The account of the substitution of active substances, in any thing but infinitesimal doses, for homœopathic globules, &c. as given in the last number but one in the *GAZETTE*, will not surprise many of those who have been accustomed to investigate closely the practice. I have also adduced analogous instances in the last edition of my work,* especially the case of the Duke di Cannizaro, formerly well known in London as Count St. Antonio, who at Milan, being treated homœopathically for some slight ailment, had to take three globules, at intervals of some hours. Having accidentally omitted the morning globule, he said to his valet, when the time for taking the second arrived, that when he ought to take the third dose he would be at the Opera, and that being homœopathic globules, it would do no harm to take the three at once, which he accordingly did, and was dead within two hours;—the preparation being one of *nux vomica*.—Your obedient servant,

EDWIN LEE.

Curzon Street, Aug. 21st, 1847.

MEDICAL WITNESSES, AND CORONERS' FEES FOR ANALYSIS.

SIR,—At page 216, (July 30th), an anonymous letter on the above subject appears, from, if we may guess by the signature, a very plain straightforward person. Be that as it may, his object seems good, and he writes in a good enough spirit. Those whom he considerably endeavours to enlighten take his remarks as given in a right spirit, and offer others in return; presuming that correctness, not unqualified victory, is the object of both. The memorialists seem to have undertaken "the onerous and responsible duties" to prevent the necessity of sending to a distance for a "medical chemist;" and are *therefore* (!) presumed to have stepped "out of their own proper province as physicians and surgeons, to undertake the duties of a *practical* chemist." As thus put, your correspondent may already perceive where the misapprehension lies; for while the memorialists evidently make no so general profession of the vast science in question as does the "practical chemist," they clearly enough claim what we must, from their very education and pursuits, and judging from the report presented by them to the coroner, concede as their right,—and, be it observed, their ex-

* Hydropathy and Homœopathy impartially appreciated.

clusive right too—to be regarded as "medical chemists,"—a term clearly synonymous with "toxicologists," and sufficiently far removed from "chemists and druggists" to prevent any misconception among those who are acquainted with the respective education, attainments, and duties of the several parties referred to. To detect arsenic in the contents of the stomach, or in gruel, is manifestly as easy to the non-medical as it is to the medical chemist, but to speak positively to its having got there by having been swallowed during life, or introduced into the body after death, might be a rather delicate matter for a practical chemist, *unless* he were also an anatomist and pathologist; and still more difficult would it be—in fact, out of the question—for a non-medical chemist to say how far such discovery had to do with death; since, in one who had died from ague, or with one of several akin diseases upon him, arsenic might readily be found, although having as little to do with the death as the purest water he had drunk; or, on the other hand, as every toxicologist knows, only a trifling fraction of a grain of arsenic might be found, where death had actually been caused by it. With every apology, believe me, sir,

Yours obliged,

MEDICUS.

Medical Intelligence.

UNIVERSITY OF LONDON.

FIRST EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE—1847.

EXAMINATION FOR HONOURS.

Anatomy and Physiology.

Bridgewater, T. (Exhibition and Gold Medal) King's College.
 Morris, James (Gold Medal) University Coll.
 Lynch, John Cox, King's College.
 { Chuckerbutty, Soorjoo C., University Coll.
 { Shelley, Hubert, Guy's Hospital.
 Devenish, Samuel Weston, Guy's Hospital.
 Cubitt, George Robert, King's College.

Chemistry.

Cubitt, G. R. (Exhibition and Gold Medal) King's College.
 Lynch, J. Cox (Gold Medal) King's Coll.
 Clapp, W. T. G. Woodforde, Univ. Coll.
 Drew, Joseph, Royal Manchester School of Medicine.
 Morris, James, University College.
 Shelley, Hubert, Guy's Hospital.
 Bridgewater, Thomas, King's College.
 Ball, Richard Dechamp, University College.
 Chuckerbutty, Soorjoo C., University Coll.
 Devenish, Samuel Weston, Guy's Hospital.
 Willett, Josiah, Guy's Hospital.

*Materia Medica and Pharmaceutical
Chemistry.*

Devenish, S. W. (Exhibition and Gold Medal) Guy's Hospital.
Lynch, J. Cox (Gold Medal) King's Coll.
Morris, James, University College.
Drew, Joseph, Royal Manchester School of Medicine.
Bridgwater Thomas, King's College.
Clapp, W. T. G. Woodforde, Univ. Coll.
Black, Cornelius, Edinburgh Sch. of Med.
Willett, Josiah, Guy's Hospital.
Shelley, Hubert, Guy's Hospital.
Jago, Frederick W. Pearce, London Hosp.
Chuckerbutty, Soorjoo C., University Coll.

ROYAL COLLEGE OF SURGEONS.

GENTLEMEN admitted Members on Friday, August 20, 1847.—S. G. Bonasfield—T. A. Rogers—W. H. Cook—E. B. Sinclair—W. A. Roche—R. E. Jones—M. A. Swan—M. Halley—E. C. Curran—R. Gunn—J. Newton—D. G. Jones.

Admitted Monday 23d.—W. L. Cashel—R. T. Spark—C. Ferraby—J. W. Crosse—E. Abercrombie—J. M. Camplin—M. J. Booth—C. T. Wagstaff—W. O. J. Wolleston—B. F. Mathews.

APOTHECARIES' HALL.

NAMES of gentlemen who passed their examination and received certificates to practise on Thursday, 19th instant.—Thomas Hunter, R.N., Budleigh, Latterton, Devon—Martin Folkes Bush, Trowbridge, Wilts—Samuel Griffith—John Simmonds, Nedham, Leicester.

Selections from Journals.

FEVER IN EMIGRANT SHIPS.

THIS disease, which is but a malignant modification of typhus, has carried off great numbers; and, we are sorry to add, from its remarkably contagious nature, is rapidly gaining ground in this city, Quebec, and those places along the route to the upper provinces usually followed by the emigrants. In consequence of the crowded state of the passengers on ship board, aided by poor diet, want of free ventilation, and that total absence of personal cleanliness for which the poorer class of the Irish who arrive here appear to be distinguished, numbers have perished on the passage; while in those whose constitutions have enabled them to weather the hardships and distress incident to protracted voyages under the circumstances mentioned, the disease rapidly develops itself after their arrival, and is characterised by the same malignity, and a nearly uniform mortality, under whatever circumstances treated. When treated early, the

disease is most usually found manageable; but if delay takes place, even for a few days, before medical assistance is called in, the cases most frequently turn out unfavourably. It is usually ushered in by a rigor, general *malaise*, and the usual concomitants of a febrile attack; to which are superadded a marked prostration of nervous energy, mental depression, disinclination to motion, the tongue usually affording palpable evidence of irritation or congestion of the mucous membrane of the alimentary canal, and in many cases the icteroid tint of the conjunctiva and skin denoting a congested state of the hepatic system, and an impairment of its functions. Diarrhoea, dysentery, and bronchitis, are the usual complications, and in one respect the disease differs materially from the typhus which in previous years has prevailed among the emigrants, in the super-vention of profuse sweats, of a non-critical character, breaking out at irregular periods of the disease, and in all the cases in which we have seen it, indicating the necessity for an immediate recourse to a stimulant treatment. Petechiae make their appearance usually about the sixth day, and are diagnostic of the severity of the disease, and its type.

With reference to the treatment, we have to observe that one of an active nature is to be generally avoided. So great is the nervous depression and the debility, that abstraction of blood, either local or general, can seldom be borne with impunity, even in those cases which, under ordinary circumstances, would appear most to demand it. In other respects, the treatment to be pursued is that usually to be employed in febrile cases, omitting every article likely to induce, or keep up, irritation of the mucous membrane; while a cautious stimulation is usually early demanded when the pulse affords signs of weakness.

Up to the present moment, 32,338 emigrants have landed on our shores; and of this number, exclusive of those who have died on the passage, and are sick in this city, Quebec, and the intermediate places, (and of whom we have no record, because not entering the hospitals,) upwards of 5000 have been known to have been ill—being about one-sixth of the whole number. The medical staff at the Quarantine, and at the Emigrant Sheds in the vicinity of this city, have received additions to their numbers, but are yet insufficient to meet the exigency. The medical officers in charge are worn out and harassed with their arduous and unceasing labours. The mortality is appalling. At the quarantine establishment at Grosse Isle, 2,796 cases, of which more than four-fifths were cases of fever, have been treated between the 8th of May and the 19th of June. Of this number 565 have died, being

at the rate of 1 in every 4·9 cases, or 20·4 per cent. At the emigrant hospitals, in the neighbourhood of this city, between the 13th and 28th of June, 1420 cases, all of fever, were admitted—the deaths during the same period numbering 331, affording a greater ratio of mortality, the rate being 1 to every 4·2 cases, or 23·8 per cent. We have not been enabled to arrive at any satisfactory conclusion with reference to the Marine Hospital at Quebec, no return having been made to the provincial secretary's office anteriorly to the 20th of June. The weekly return during the period between the 20th and 26th June, gave a total number of 859 cases; of which 394 were cases of fever, and 24 of dysentery. The mortality during the same period was 27. Assuming that this mortality was met with exclusively among these cases, it would form a ratio of 1 to every 15·4, or 6·4 per cent., a ratio so disproportionate to what has been observed at the other stations, that we can place no reliance upon it, as indicative of the character or type of the cases admitted. We are enabled to speak more positively and with greater certainty with reference to the Montreal General Hospital. From the 28th May to the 28th June, 298 sick emigrants were admitted. Of these 143 were cases of typhus, 18 were cases of diarrhoea, and 97 of common continued fever. The mortality among the typhus cases, every one of which was of the petechial type, was 1 to 4·9, or 20·4 per cent. Of the cases of simple continued fever and diarrhoea, one only, respectively, died; while estimating the mortality upon the general number of admissions, as we have done in the other institutions, we find it to have been for the same period, 1 to every 7·7 cases, or 12·9 per cent., the total admissions having been 324, and the deaths 42.

We regret that our data are so imperfect. The returns from the institutions at Grosse Isle, the Marine Hospital, and the Emigrant Sheds in this city, afford but general results. The deaths are recorded, but without specifying the particular diseases under which the mortality occurred. For general purposes, they may be turned to advantage, but for special ends, such as the ratio of the mortality of a particular disease, they are valueless. The return of the Montreal General Hospital may be assumed as a fair criterion of the average mortality of the ship fever, even under its most favourable chances of treatment, and portrays its malignant character, and its fatality, in a manner which cannot be misinterpreted.

We do not wish to be considered as alarmists, nor are we writing for the purpose of engendering any unnecessary or groundless apprehensions. The disease is an eminently contagious one; and the records of private practice both in this city and Quebec, (as we

have been informed,) proclaim its steady progress among the inhabitants. To be forewarned is to be forearmed. Let the strictest cleanliness prevail everywhere. Let the Boards of Health be active and energetic in their duties, and let the civic authorities pay immediate attention to their reports, and carry out their suggestions with vigorous determination, laying all pecuniary considerations aside. Public health is public wealth; by paying due regard to the former, the latter is certain to follow; and the funds of the city are much better employed, and will produce a greater and more satisfactory return by the mode indicated, than by all the embellishments which the same amount of money might command. We think that the emigrants, under existing circumstances, should be debarred all communication with the citizens.—*British American Journal*, July, 1847.

PATHOLOGY.

PERFORATION OF THE STOMACH IN ITS LESSER CURVATURE; OPENING INTO AN ABNORMAL SAC, FORMED BY OLD ADHESIONS OF OMENTUM, IN WHICH THE STOMACH AND LIVER WERE CONTAINED. BY DR. STOKES.

THE subject of this case was a middle-aged man, whom Dr. Stokes had been called in to see, in consultation with Mr. Carroll. He complained of severe pain in the upper part of the abdomen; his aspect was sallow, contracted, and unhealthy. During four years previously, he had been subject to an affection of the stomach, frequently recurring; the symptoms of which were gnawing pain and pyrosis, for which Dr. S. had prescribed opiates. On the present occasion he was seen lying in bed; his countenance was anxious; he complained of a general uneasiness in the abdomen, which was distended, but he could not refer the pain to any one point in particular; the bowels were constipated, aperients failed to relieve him, and at night he had become worse; he had then great pain in the abdomen, at the lower part of the left side; the pulse was feeble; venesection was resorted to, but the blood which was drawn had no inflammatory appearance; the hip-bath was used, and gave considerable relief, which continued until the following day; the belly was then greatly swollen, not uniformly, but into two distinct portions, one above the other, separated by a sulcus. These symptoms continued during the next fourteen days, with pain or distress referred to the diaphragm and to the lower part of the left side. There were some intermissions from pain; the urine was natural; there was appetite for food; and in fact, he took much nourishment. During the last days of his

existence the tongue became dry and brown; there was a contraction of the abdomen just above the umbilicus. A great variety of treatment was used; purgatives had no effect; croton oil was tried, and then the long tube introduced into the rectum; enemata were thrown up, but all was quite useless; opium also failed; so much as nine grains were administered in one day without any apparent effect. On laying open the abdomen after death, it looked, at first, as if the diaphragm was double: this appearance was caused by a chronic adhesion, almost ligamentous, of omentum, forming a dissepiment, between which and the diaphragm were included the stomach and liver, with some fluid intermixed with some of the ingesta and a quantity of gaseous fluid; the liver had lost its convex form; part of the left lobe was actually concave, and was covered with matters that had been taken into the stomach; there was a large perforation in the lesser curvature through which these ingesta had escaped; there was an ancient ulceration with well-defined edges within the stomach; this ulcer was a chronic ulcer of Cruveilhier and Abercrombie. The pylorus was contracted, but there was no cancerous ulceration. There was soft and plastic lymph effused here and there among the intestines; the peritoneal inflammation was limited by the recent omental adhesions, the effect of which was that the perforation had been made not into the general peritoneal cavity, but into an abnormal sac of the peritoneum, in which the stomach and liver were contained. No similar case to this has been described (?); the perforation was not diagnosed; the symptoms which were present, the intermissions, and the absence of general peritonitis sufficiently explain the cause of the deficient diagnosis. Yet perhaps it should have been suspected from the remarkable tolerance of opium which existed, and which Dr. Graves has observed to occur constantly in cases of perforated intestine; Dr. Stokes has himself seen twenty-four grains of opium given without effect, and he believes the same happens in all perforations of the peritoneum.—*Report of the Dublin Pathological Society, Dublin Quarterly Journal of Medical Science.*

[It is not very evident with what view violent purgatives were administered in this case; it is not stated whether obstinate constipation existed, but the symptoms do not appear to have been at any period of the case at all indicative of intestinal obstruction. It is probable that had this patient been treated from the commencement of his attack with moderate doses of opium, purgatives by the mouth being altogether avoided, and strict abstinence enforced, the aperture in the stomach might have become adherent to the liver, or to some adjacent peritoneal

surface, and the patient's life have been thus considerably prolonged. We have a strong objection to the use of cathartics in cases of acute abdominal disease.—*Ed. Gaz.*]

MIDWIFERY.

CASE OF UTERO-VESICAL FISTULA—NOVEL MEANS OF RELIEF.

MR. ISAAC HARRISON brought before the Reading Pathological Society the case of a woman, aged 41 years, who, thirteen days after a protracted labour (which had to be completed by instrumental aid), begun to suffer from a flow of urine from the vagina, not a drop passing through its natural outlet. This state had continued, to the patient's great torment, for five years previous to her coming under Mr. Harrison's care. After repeated examinations with the speculum, the only exact information the author could obtain was, that the urine issued from the os uteri; how it came there he was unable to determine, and had almost given it up in despair, when, exploring with a small catheter in the bladder, with the concavity downwards and a finger in the os uteri, the catheter and the finger came in contact. The problem was now solved; there was a communication between the fundus of the bladder and the cervix uteri, about three-quarters of an inch within the cervix, just at its internal orifice, and as large as to admit readily a No. 6 male catheter. After making one of these examinations, a circumstance occurred which confirmed the author in a plan he had devised for the relief of the disease. For the first time for five years she remained dry for two hours; no dribbling took place, and she then passed water in a stream. This arose, he imagines, from the tumefaction of the edges of the fistula producing temporary closure of its orifice. In July 1841 he acted upon his plan, by proceeding to operate in the following manner:—A Brodie's catheter, armed with a long piece of twine, was introduced into the bladder, concavity downwards; and being guided by a finger within the os uteri, he readily found the rupture, passed the instrument through the vagina, seized the thread, and then withdrew the catheter, thus leaving one end of the thread hanging from the urethra, and the other from the vagina. To the urethral extremity he tied a skein of six threads of glover's silk, oiled them, and drawing at the vaginal extremity, dragged the silk through the fistula, and then tied the urethral and vaginal ends together. The result was most gratifying. From the time of their introduction to the withdrawal of the last thread, no dribbling took place, except when the patient was using some extraordinary bodily exertion; and under these circumstances it did sometimes occur.

On the 4th day after the operation, irritation beginning to be produced, the first thread was withdrawn; on the 5th the second; on the 6th the third; on the 10th the fourth; and on the 17th the fifth, leaving only one remaining;—so that in seventeen days the operation may be said to have been completed. During this time considerable irritability of the bladder existed, with great impatience of its contents, so that they were obliged to be evacuated every hour. This symptom, however, gradually subsided simply with fomentations, and without the aid of any medicines. At each recurring menstrual period the urine was, and now is, voided highly charged with the catamenial fluid. During the three subsequent months Mr. Harrinson changed the size of the thread three times, so that at last it was reduced to as small a one as could be procured compatible with any strength and durability. In October the narrator withdrew the last thread. Unfortunately he was disappointed: in twenty-five days the dribbling was as bad as ever. Mr. Harrinson was glad enough, therefore, to retreat to his former position, by introducing now four large threads. In twenty-eight days they were reduced to one, and the patient was herself again. Mr. Harrinson has purposely delayed the publication of the case, in order to test the sufficiency of the means employed. He is pleased to add (May 1845), that she remains in the same comfortable state. She changes the thread herself once in three or four weeks, goes about, performs her domestic duties, &c. with no inconvenience. Not a drop of urine has escaped for the last three years. The only precaution necessary is, that the thread be drawn down once a day, to cleanse it from the sabulous matter which is deposited upon it.—*Abridged from the Provincial Med. and Surg. Journ.*

BIRTHS & DEATHS IN THE METROPOLIS During the week ending Saturday, Aug. 14.

BIRTHS.	DEATHS.	Av. of 5 Sum.
Males.... 639	Males.... 550	Males.... 479
Females.. 593	Females.. 538	Females.. 461
1232	1108	940

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	168
NORTH—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 366,303)	220
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	200
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 393,347)	236
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich .. (Pop. 479,406)	275
Total	1108

CAUSES OF DEATH.

ALL CAUSES	1108	Av. of 5 Sum. 940
SPECIFIED CAUSES	1108	935
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	392	226
<i>Sporadic Diseases, viz.—</i>		
2. Dropsy, Cancer, &c. of uncertain seat	130	103
3. Brain, Spinal Marrow, Nerves, and Senses	155	157
4. Lungs and other Organs of Respiration	205	226
5. Heart and Bloodvessels	26	25
6. Stomach, Liver, and other Organs of Digestion	99	94
7. Diseases of the Kidneys, &c. ..	6	8
8. Childbirth, Diseases of the Uterus, &c.	11	10
9. Rheumatism, Diseases of the Bones, Joints, &c.	8	7
10. Skin, Cellular Tissue, &c.	5	2
11. Old Age	37	50
12. Violence, Privation, Cold, and Intemperance	52	28

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	26	Convulsion	49
Measles	54		
Scarlatina	16	Bronchitis	26
Whooping-cough	9	Pneumonia	39
Typhus	70	Phthisis	120
		Dis. of Lungs, &c. ..	7
Dropsy	16		
Sudden deaths ..	10	Teething	16
		Dis. Stomach, &c. ..	8
		Dis. of Liver, &c. ..	15
Hydrocephalus ..	23		
Apoplexy	29	Childbirth	7
Paralysis	22	Dis. of Uterus, &c. ..	2

REMARKS.—The total number of deaths was 108 above the weekly summer average. This increase of deaths is chiefly due to a sudden and large increase in the fatality of zymotic diseases. The deaths from typhus fever were 70, to a summer average of 30. Diarrhoea infantum is especially fatal. The deaths among children from this disease were no less than 136 out of a total of 158! The summer average is 55.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	29.93
" " Thermometer	63.2
Self-registering do. max. 100.5 min. 55.2	
" in the Thames water — ..	60.2 — 63.2
* From 13 observations daily. † Sum.	

RAIN, in inches, 0.47: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 1.6° above the mean of the month.

NOTICES TO CORRESPONDENTS.

Dr. Wardell's additional paper has been received.

Dr. Thomas Smith, of Cheltenham, has written to supply an omission in the foot-note attached by us to Mr. Tracy's letter in our last number (p. 349). Dr. S. mentions that he recommended the sponge as the best mode of administering the ether previously to the adoption of that plan by Mr. Tibbs. We shall be happy to receive Dr. Smith's case.

ERRATUM.—In our last number, p. 248, col. 2, 25 lines from top, for "involved in the pharynx," read *larynx*.

Lectures.

COURSE OF SURGERY,

Delivered in the years 1846 and 1847,

By BRANSEY B. COOPER, F.R.S.

Surgeon, and Lecturer on Surgery at Guy's Hospital.

LECTURE IX.

Burns and scalds—Difficulties in their treatment—Effects of heat and cold upon the skin—Classification of burns—Rube-faction—Vesication—Danger of exposing the cutis vera—Suppuration—Ulceration and destruction of cutis—Sloughing and gangrene—Local treatment of each—Internal remedies in burns—Ulceration of the duodenum—Mr. Curling's and Dr. Hodgkin's hypotheses—Case of ulcerated duodenum and phlebitis after a burn—Permanent contractions following burns—Propriety of operating for their relief considered—Different operations for their removal—Case.

BURNS AND SCALDS.

COMMON as is the occurrence of burns and scalds in the practice of every surgeon, I really think, gentlemen, that there is scarcely any class of accidents for the treatment of which there are fewer or less decided principles laid down. Nor does this arise from the unimportance of their effects, for the amount of mortality resulting from burns and scalds in every institution is so great that they have always held a prominent place in the list of deaths from accidental causes; and during the recovery of those who do survive, there often arise the greatest surgical difficulties in endeavouring to prevent the awful contractions which so frequently attend the cicatrizing process.

The application of heat to the surface of the skin produces effects in proportion to the degree to which it extends beyond the natural temperature of the body: for instance, if a person gets into a hot bath at the temperature of 104° , an increased action is excited in the skin, which leads to a prostration of strength in proportion to the length of time he is exposed to its influence; but it often produces a most salutary effect in certain affections of the viscera, proving the great importance of the natural functions of the cutaneous surface in maintaining the healthy condition of the body.

So, also, by the abstraction of heat from the surface, by plunging a patient into cold water, most powerful effects are produced. Again, if during the period of convalescence

from scarlet fever or measles there be any thing to check transpiration through the skin, the patient is almost certain to fall a victim to the suppression,—in the first case from an affection of the serous membranes, more especially that of the abdomen, and the areolar tissue generally; and in the second, from an affection of the mucous membranes, and more particularly that of the respiratory passages. In psora, persons have been known to die from having the pores of their skin closed, in consequence of the application of sulphur ointment being too widely extended over the body.

In pneumonia, intense heat of the skin is the great pathognomonic sign of the disease, and to check it by the application of cold is highly dangerous, for the lungs are incapable of performing their functions without the assistance of the skin. Cold to the surface of the body induces internal congestions. These facts afford so many proofs of the importance of the functions of the skin to the animal economy.

I make these preliminary remarks, to impress upon your minds the fact that no sudden change can be effected over a large surface of the skin without the constitution generally participating in the change. You will easily believe, therefore, gentlemen, that when scalds or burns occur, the shock to the system will be in proportion to their extent, to the importance of the part injured, and to the intensity of the heat applied.

As to the division of burns and scalds, I think they are not to be classified according to the intensity of the heat, the consistence and capacity for heat possessed by the fluid, or even to the length of time that the heat has been applied, but rather according to the effects that have been produced by its application, which often penetrate beyond the surface, excite violent action, and become dangerous to life.

The most simple result from a burn or scald is a mere superficial inflammation, uncircumscribed, unattended with swelling, and accompanied by very little pain, the whole merely amounting to a slight turgescence of vessels. This, unless egregiously interfered with, will very soon terminate spontaneously, probably with a slight desquamation of the cuticle. Even with this trivial local injury, if the patient be of a very irritable temperament, soothing topical remedies may be beneficially applied—as, for instance, cold white-wash; or perhaps the patient may find it more agreeable if gently warmed. Slight antiphlogistic and narcotic remedies may also, in some few instances, be combined with the local treatment.

From the peculiarity of constitution, the same degree of heat may in another patient produce a greater degree of injury, and its

influence may penetrate into deeper structures, and interfere with the vital powers of the true skin, occasioning at once, or subsequently, a separation of the cuticle from the surface of the cutis, and an effusion of serum between them; or a higher degree of temperature may produce this aggravated result.

In this case, the topical signs indicate the greater degree of injury sustained; the redness of the skin is greater, the pain more poignant, increased temperature of the surface is evident, and swelling soon supervenes. These are the signs of local inflammation produced by a cause which does not act in any way specifically, but which requires the usual means to allay its intensity, and to prevent its affecting the constitution generally.

The removal of the exciting cause of inflammation is the first principle of the treatment of burns, and as heat has been the cause, and an abnormal amount of heat still remains in the injured parts, the application of cold seems strongly indicated. I confess, however, I have the same dread of applying cold to any extent in burns and scalds, that I have of applying heat in cases of frost-bites; the reaction induced is generally too great for the inflamed cutis to sustain, and instead of the inflammation becoming resolved, it is increased, fresh vesicles form, symptomatic fever is produced, and injurious effects result.

It may occur to you, gentlemen, that this may be prevented by continuing the application of cold without intermission,—and in some cases this is true; the adoption of this plan may prevent the dreaded reaction, but by such treatment, I think the tendency to rigors is to be feared; for, as we have shewn, that, when tissues are inflamed, the blood in their capillaries undergoes a change suited to the increased demand of the tissues for supply of its constituents, there seems to be reason in the belief that the restraining action of cold must interfere with the intended reciprocal action between tissue, blood, and blood-vessels. Therefore tepid applications are the best, producing as they do much less and not so sudden an interference with nature's process of reparation.

When vesicles have formed, great care should be taken not to allow the cuticle to be removed. If it be rendered very tense by the quantity of serum under it, a valvular opening may be made with a small lancet to evacuate the fluid; but still retaining the cuticle as a covering to the sensitive cutis. I should think, gentlemen, some of you must have experienced a practical hint of the use of this covering in a blister produced by either rowing or riding; for a large blister from either of these causes gives little or no inconvenience while the integrity of the cuticle

is maintained; but only destroy it, and violent constitutional disturbance may follow the slight abrasion. You may readily conceive, therefore, what must be the effect resulting from the exposure of a very large surface of cutis. Indeed, patients who have been extensively, but apparently only superficially, scalded, have been known to die in a state of collapse soon after the injury, merely from exposure of the sentient extremities of the nerves of the true skin. The physical influence which the cuticle produces on the integuments when removed from the body, is as striking as the vital changes which are effected on the cutis by the desquamation of the cuticle in the living body.

If you take two portions of skin, one with the cuticle removed, and the other retaining it, and expose them to the atmosphere, and even to the rays of the summer's sun, the portion on which the cuticle is preserved will remain supple and moist for two or three days, while the other in a few hours will be shrivelled up and perfectly dry. You see, therefore, the importance to be attached to the preservation of the cuticle. If, by any accidental cause, or from injudicious interference, the cuticle has been removed from a vesication, the indication is sufficiently clear, namely, to find a substitute for it; and hence flour, raw cotton, simple ointment, or any such remedies as are best adapted to preserve the sentient extremities of the nerves from the influence of external agents, are applied over the exposed surface; while constitutional remedies must also be had recourse to. If there be indications of irritative fever supervening, suppuration generally takes place from the cutis after vesications from a burn, but is not an invariable concomitant, as sometimes the plasma thrown out becomes organized, and the wound cicatrises without the formation of pus. Suppuration, however, frequently does occur, and, becoming extremely difficult to check, may lead to great constitutional disturbance. If tonics and nutritious diet, with the application of simple dressings to the sore, do not check the suppurative process, I have known the following lotion prove highly efficacious:—*R* Pulv. Opii, gr. iv.; Mucilag. Gum Acaciæ, ziss.; Liq. Calcis, ʒviss. M. ft. lotio. And this lotion proves equally beneficial when ulceration accompanies the suppurative process, in which case opium is also required to be administered internally, or, in the case of children, the syrup of poppies is preferable. Chloride of lime in solution, and nitrate of silver, have also been recommended. The latter, I suppose, acts beneficially by destroying the sensibility of the terminating extremities of the nerves, which may, perhaps, from their high degree

of sensibility, keep up the ulcerative process, for how often do we find phagedenic ulcers checked at once by the use of lunar caustic. When the heat has been sufficient to destroy the sensibility of the cutis, or protracted inflammation has done so, stimulating applications will be found the most effectual remedies, and in this hospital we generally employ oil and lime-water, sometimes with a little oil of turpentine in it, or the ung. resinæ flavæ, either spread upon lint, or made into a liniment by being rubbed down with a sufficient quantity of spirit of turpentine to make it a fit consistency to admit of being applied with a brush. In these more violent cases, support, and very often stimuli, are required; opiates to allay irritation, with due attention to the state of the excretions, and more especially to that of the bowels.

But with every precaution, a great number of our burns prove fatal. I must acknowledge, indeed, the large proportion of bad cases; and I believe the danger is as great when extensive surfaces are submitted to the influence of heat, although only superficially, as when the heat is more concentrated, and has extended its influence in depth rather than surface; and certainly this has proved true in my experience, as far as refers to rapid dissolution.

This view, however, must not perhaps extend to such cases as those in which the intensity of the heat, or the long continuance of its application, has produced the total destruction of the parts to a considerable depth as well as extent, and the influence has probably been propagated to the interior of the body. Such gangrenous or sloughing burns usually occur from the clothes catching fire, the explosion of gun-powder or inflammable air, or from persons falling into brewers' or soap-boilers' vats.

Under these violent circumstances, the constitution is at once affected; rigors immediately come on; the whole surface of the body is cold; the pulse is quick and small; the respiration short and hurried; vomiting and hiccough supervene, and the patient generally dies comatose about the second or third day.

All you can do in these cases, gentlemen, is directly to protect your patient from any exposure to cold, and, if it be possible, the temperature of the room in which he is placed should be constantly maintained, at a high degree, for the first twenty-four hours; and, if the collapse be great and protracted, stimuli should be administered, and, as soon as reaction is restored, a large dose of opium given. The wounds should be covered over either with basilicon ointment, spread on lint, or the oil and lime-water dressing; and on those parts where the cutis is not destroyed, flour should be plentifully strewed.

Should the patient survive the first violent

shock, he has yet much to go through during the process of reparation; indeed, he may fall a victim to the violence of the symptomatic fever preceding the restorative action, or he may ultimately sink from hectic fever, or slower exhaustion of vital power, resulting from profuse suppuration.

Burns, especially when arising from the explosion of gun-powder, are said to be more dangerous than scalds. In my opinion, the comparative danger of the two is in proportion to the extent of cutis exposed. Therefore, let it always be your chief object to preserve the cuticle as much as possible; and if you be present at the undressing of the patient, or assist in so doing, take great care that large portions of cuticle are not removed with the stockings, or other parts of the dress, as has been described by the late Mr. Earle so frequently to occur by the roughness of assistants: this observation is most judicious. I cannot, however, agree with Mr. Earle in his proposition of plunging the limb into ice-cold water, for the reasons which I have already given; but if the patient were placed in a warm bath, and his clothes cut off while immersed in the water, I believe the equable temperature which would thus be maintained would prove highly beneficial; while, at the same time, it would facilitate the removal of the dress.

As to the various local remedies which have been recommended in the numerous works on the treatment of burns, I should needlessly occupy your time by describing them, for it is but rarely that the particular application is the desideratum, but the principles which dictate its use; and those principles are founded upon the just appreciation of the phenomena inseparable from the various stages of inflammation. In one burn you may have presented to your view the mere blush, not surpassing active congestion, of the vessels of the inflamed part; in another portion you may have vesicles, with the cuticle entire, or torn away, leaving the cutis exposed; or you may find the cutis destroyed, and in a state of slough:—how, then, could any general treatment, either topical or constitutional, be laid down for your adoption? You must judge for yourselves, gentlemen, by a close investigation of all the circumstances of the particular case before you, and regulate your treatment according to the effect produced upon the constitution of your patient.

The employment of internal remedies in burns, as, indeed, in all other cases, must be regulated by the severity, and, also the peculiarity, of the symptoms which present themselves; but I am perhaps safe in saying, that gentle antiphlogistic means, at the same time with support, narcotics, and sometimes stimuli, are very generally indicated.

During the progress of the case, every attention must be paid to the position of the body and limbs, so as to prevent, as much as possible, the contractions so frequently attending the cicatrization of wounds from burns and scalds, which often lead to the most unsightly distortions.

Before I speak of the means which are recommended for the removal of these cicatrizations, I will mention to you one of the very frequent sequels of extensive burns, and which was first observed by Mr. Curling, of the London Hospital. In mentioning the name of this gentleman, I cannot deny myself the gratification of upholding him as a pattern to yourselves in zeal, talent, and integrity.

Mr. Curling observed, that ejection of blood, both from the stomach and bowels, was a very frequent occurrence after severe burns, and that death very soon followed such bleedings. This fact led him to a close investigation of the subject, and he took every opportunity of making a post-mortem examination of the patients who died in consequence of severe burns, when he discovered that ulceration of the commencement of the duodenum was a very common concomitant, and invariable if hæmatemesis or purging of blood formed a prominent symptom. I cannot do better than quote Mr. Curling's own words, in his theory on the explanation of this important pathological fact.

"It would be interesting to inquire how it happens that in cases of burn, the first portion of the duodenum is peculiarly the seat of inflammation and ulceration, in preference to other parts of the intestinal tube. It cannot be attributed solely to the congestion of the mucous membrane, which commonly occurs after a severe burn, inasmuch as the remainder of the alimentary canal, though equally participating in the vascular disturbance, very rarely indeed becomes affected with ulceration. May it not be the effect of the sudden arrest of the important functions of a large part of the skin, not only of that actually injured or destroyed by the fire, but also of the parts which usually become afterwards inflamed to some extent around the seat of injury? The duodenum is furnished with peculiar glands, the true glands of Brunner, which abound in that particular part of the intestine, the seat of disease; and although their office, and the nature and uses of their secretion, have not been well ascertained, their size and number indicate that they must be capable of pouring out a large quantity of fluid, and that their functions in the economy are by no means unimportant. Now, it is seldom that the secretions of any organ can be suddenly stopped without injurious consequences resulting, and con-

sidering the importance of those of the skin, and the continuity of this structure with the mucous surface of the alimentary canal, we can scarcely be surprised that the duodenal glands should sympathise, and endeavour by an increased action to compensate for the suppression of the exhalation from the skin, and that the irritation consequent thereon should often lead to inflammation and ulceration.

"Dr. Hodgkin seems rather inclined to attribute the ulceration of the duodenum to vomiting, and says, that in some instances it has been the cause of ulceration, as much as the ulceration has been the cause of keeping up the vomiting."

This difference of opinion it seems may be easily settled by further investigation, for if it be true that vomiting will produce ulceration in the duodenum, surely we shall find it in this obstinate vomiting which so frequently occur in cases of hernia, and other obstructions to the alvine excretions which the absence of hæmatemesis does not lead us to anticipate.

"I will now relate a case which occurred in this hospital under Mr. Morgan, where there was not only ulceration of the duodenum but also partial phlebitis. Thomas Wallis, æt. 8½ years, was admitted April 13th, 1847, for a burn which extended over the back of the head, the neck, and the right upper extremity. In some parts, especially about the head and neck, it was very deep. He was partially collapsed when admitted, and was treated in the usual way. The burn itself was dusted with flour. Sloughing, which soon commenced, lasted about a fortnight. During this period his health seemed pretty good, and his wound was dressed with poultices and mild stimulating ointments. Five or six days before he died he was attacked with diarrhoea, which, however, was readily checked by chalk. This symptom was succeeded by constant sickness, the patient retaining little or nothing in his stomach, but no blood was passed either by the mouth or the rectum. He did not suffer from rigors, complained of no definite or local pain, and appeared quite conscious until May 9th, when he died, after having been comatose for some hours. Before death the edges of the wound in the neighbourhood of the elbow had somewhat healed, but no where else had this taken place.

At the post-mortem examination there was found in the duodenum, about an inch from the pylorus, a circular ulcer of the size of a pea extending only through the mucous membrane. The edges were clean, not elevated nor red. Brunner's glands were unaffected. The cerebral sinuses were filled with dark coagula of blood which were adherent to their lining membrane. The rest of the body was healthy.

"If suppuration take place in a burn great care must be taken to prevent contractions during and after cicatrization, for both granulations and newly-formed skin have such a tendency to shrink, that all the precautions which can be taken will sometimes prove abortive, and dreadful distortions result."

I cannot agree with Mr. Earle in considering them always as a "source of blame to surgeons," but, on the contrary, believe that they are the effects of a condition of granulations and skin peculiar to burns, as, indeed, John Hunter has said:—"The contraction takes place in every point of the granulations, but principally from edge to edge, smaller and smaller, although there is little or no new skin formed, which now even has a similar power, assists the contraction of the granulations, and is generally more considerable than that of the granulations themselves; drawing the mouth of the wound together like a purse." These contractions produce most frightful scars, and frequently interfere with the functions of important joints. I have often seen the chin drawn down upon the sternum, the lower jaw depressed so as to prevent the closing of the mouth, the saliva constantly flowing over the lips, deglutition obstructed, and all these inconveniences attended with frightful distortions of countenance. Permanent contractions of the limbs frequently result, tying the upper arm to the chest, after burns about the shoulders, so as entirely to prevent the performance of the motions of the upper extremity, rendering it often worse than useless, an actual burthen, and the inconvenience inducing the sufferer to seek any operation, even to the removal of the limb, for the cure of the deformity, rather than remain a permanent cripple. As to the operations proposed, and often performed, for the cure of the deformities arising from burns, I can say but little in their favour; and, indeed, so unsuccessful have they proved in my own practice, that I feel but little disposed to recommend a patient to submit to the painful dissections which are required for the removal of the cicatrices, and which so rarely afford the relief anticipated. Dupuytren, who does not speak very favourably of the result of operations on cicatrices after burns, recommends that they should never be attempted until months, or even years, after the formation of the cicatrix,—not, in fact, until the "fræna and bands had become perfectly organised," when he considers they have no longer any tendency to contract. An objection to this practice appears to me to present itself, viz. that the muscles have probably undergone a change to fit themselves to the new position of the limb; and that even bones themselves, if a joint be imph-

cated in the contraction, may have also so accommodated themselves to the circumstances in which they are placed as to be incapable of being restored to their original position, even could this be effected.

The operation usually proposed for the removal of these deformities is the transverse division of the contracted cicatrices until the parts can be drawn and extended to their natural position, and there be retained by bandages and machinery competent to the purpose. In some cases this cannot be effected at once, but must be attempted by a slow and gradual extension, which should be constantly maintained during the granulating process. When these means are employed, the apparatus should be worn for many months after the wound is healed,—indeed, until the new skin has become perfectly organised, or contraction will be certain to recur as soon as the extending force is removed. Should the granulations become too exuberant during the recovery, nitrate of silver should be freely employed to keep them down. Some surgeons have recommended that the whole extent of the cicatrized skin should be dissected off, and that the parts previously bound down should be restored as nearly as they can be to their natural position, that the edges of the healthy skin should be brought into as close an approximation as possible, and appropriate means employed to promote the healing of the wound. Modifications of this mode of treatment have been adopted by making a longitudinal incision through the healthy skin on each side of the wound, but at some distance from it, so as to enable you to bring the two portions of skin, thus let loose as it were, in as close contact as possible. Some surgeons have even practised the Taliacotian plan of partially removing a portion of skin from the vicinity of the wound, and thus attempting to restore the burnt surface by applying it over the wound, and to unite it, by what is termed the plastic mode; but, even under such circumstances, the contractions have returned with the same inveteracy as under the other modes of treatment.

I believe the great object is to prevent these contractions during the progress of the healing of the wound, and the position of the patient is the principal preventive means, taking care that the mechanical methods are persevered in until the cicatrix is perfectly organised, and the new skin has lost all its tendency to contraction; but I acknowledge it is very difficult to say when that exact period has arrived.

About three years ago I had placed under my care a child of eight years old, who had been burnt about two years before in the front part of the neck; and in consequence

of the contraction of the cicatrix, the head was drawn downwards towards the chest, the lower jaw and lip depressed, and the countenance much disfigured. I made an incision along the base of the lower jaw to the extent of the cicatrix, and, dissecting the skin of the lip from the bone, restored it to its natural position. I then dissected off the whole of the cicatrix, divided the sternal attachment of the sterno-cleido mastoideus muscle on one side, and was then able to elevate the head; in which position I secured it by an apparatus, which was made for the purpose, to support the chin, and prevent subsequent retraction. The plan promised complete success for six or eight weeks, when the pressure of the chin upon the instrument, probably from contraction recurring, became so painful that its use was obliged to be discontinued,—the result of this was, that, although the patient was relieved to a considerable degree, the deformity returned to a certain extent, and she left London permanently disfigured. One great advantage, however, was gained by this operation, viz. the lips were restored to perfect adaptation, and rendered capable of performing their natural functions. I have also divided cicatrices from burns in the hands producing contractions of the fingers, but with no better success. The protracted period necessary to the cure tires most persons out long before it is completed.

ON THE QUANTITATIVE DETERMINATION OF URIC ACID.

ON dissolving uric acid in a solution of phosphate of soda, it was found that, by the addition of hydrochloric acid, results were obtained sufficiently accurate for ordinary purposes. Thus, on dissolving 4.8 grains of uric acid in two ounces and a half of a dilute solution of phosphate of soda, all was recovered but 0.095 of a grain, or about one-fiftieth of the whole. The quantity of colouring matter attached to the uric acid compensates very nearly for the loss occasioned by washing the precipitate. Grape-sugar has not the slightest influence on its determination. Neither albumen nor blood materially affects the result; but of course acetic or phosphoric acid must be used in these cases.

The differences occasioned by the presence of bile are considerably higher than in the preceding cases; but as it is extremely improbable that the urine should ever contain such a large amount of bile as Heintz used in his experiments, the results may still be regarded as very tolerably approximative.—*Dr. Day's Report on Chemistry, 1847.*

CLINICAL LECTURE

GIVEN AT

ST. GEORGE'S HOSPITAL,

On June 15th,

By CÆSAR HAWKINS, Esq. Surgeon to the Hospital.

[Reported by MR. WALTER THOMSON.]

LECTURE VII.

1. *Fractured Ribs—Inflammation of Lungs and Pericardium.*
2. *Fractured Fibula—Abscess of Tibia.*
3. *Unreduced Dislocation of Femur.*
4. *Fungous Disease of Testis—removal.*
5. *Cases of wounded Arteries, and false Aneurism.*
6. *Wounds of Joints.*

GENTLEMEN,—You have just seen, in the room behind us, an instance of the effects produced by neglect and intemperance, in a man who met with an accident, which, under ordinary circumstances, would have been attended with but very little risk, but in his case has proved fatal.

James Cook, æt. 40, was admitted, on June 10th, into Oxford Ward, with difficulty of breathing, pain on drawing in his breath, pain on pressure about the 9th and 10th ribs, on the right side; no fracture could be discovered; dry cough, attended with pain, but no expectoration.

Pulse 130; tongue dry, loaded; countenance anxious. He fell against a curb-stone on Saturday the 5th; the pain commenced on the 6th, and a rib roller was applied on the following day: he had been suffering from diarrhoea before his admission." These symptoms made me suspect that he had fractured some of his ribs; and when he was admitted, he was in fact labouring under an attack of acute inflammation of the lungs and pleura. For this he was bled, and had a dose of calomel, and some haustus sennæ; and when I saw him, for the first time, on the following day, he expressed himself as relieved by the bleeding: the blood drawn was buffed, and slightly cupped; tongue cleaner; pulse 100, soft; cough, but no expectoration; bowels open. Some Antimonial Wine, and Tinc. Camph. C. in a saline draught, were ordered every six hours; but on the next day, we find that this temporary amendment had soon ceased, and our notes are, "much effusion in right lung, rapidly increasing—some, also, in left; tongue very dry and brown; pulse very quick; skin hot and dry;" so that with this acute inflammation of low character, existing on both sides of the chest at once, in a person of intemperate habits, in spite of all that was

done for him, by Dr. Nairne as well as myself, he died yesterday, June 14th: and you have just seen that there had been acute inflammation of the whole of the right lung going on to hepatization, general inflammation of the pleura of that side, with universal adhesions, and inflammation at the back of the lung of the opposite side, with tubercles in a quiescent state at the upper part; thus leaving him only a small portion anteriorly to breathe with. You saw, also, that three of the ribs (the 5th, 6th, and 7th,) were broken near their cartilages, and that their fractured extremities were surrounded with pus, and the intermuscular cellular texture immediately around was infiltrated with pus also; thus converting a simple fracture into a compound one, if he had lived to have had the abscess opened. The inflammation, too, had passed round from the point where the ribs were fractured, so as to affect the pericardium, as was evident from the infiltration of the cellular membrane around, and the effusion of serum into its cavity; so that it is no wonder that with all this mischief going on at once, the treatment we adopted should have been unsuccessful. The large, soft, and congested liver, was probably owing to his intemperance, and the granular state of the kidneys may no doubt be attributed to the same cause; and these giving him a predisposition to inflammation, his intemperance and neglect of the injury in the early stage easily proved fatal to him.

It so happens that there is now in the hospital probably another instance of a fracture, originally a simple one, being rendered compound by the neglect of proper precautions.

James Fry was admitted on June 8th into Fitzwilliam Ward, with, our notes tell us, "enlargement and thickening around the head of the fibula, and some thickening of the skin around the head of the tibia. There is an opening leading down to the fibula discharging purulent matter. No pain in the knee. He fell into a pit six weeks ago, and struck his knee against some iron; the knee swelled, and was painful, and afterwards a swelling formed on the outside of the leg, which was opened three weeks ago. Has been in the habit of drinking." The man walked about for two or three days after the accident, and the irritation produced by it brought on inflammation, terminating in suppuration and the formation of abscess.* If a man have granular kidneys, or even if his health be not so undermined as to have

produced that condition, the formation of matter around a simple fracture is a matter of serious import. There was a man admitted under my care two years ago, who met with an accident by which he broke his fibula. He walked about on it for two or three days. This, you know, it is possible to do after such an accident, the tibia serving as a kind of splint; and, indeed, without careful examination, fracture of this bone is sometimes very difficult to detect. When you cannot detect it satisfactorily at the time, in consequence of swelling, if you have any suspicion, be careful and examine the limb again a few days after, because if left to itself a broken fibula may heal in a wrong position, and be ever after a source of serious inconvenience. The man of whom I was speaking was admitted nine weeks after his accident with an abscess on the inner side of the leg, and with one threatening in the knee-joint. I opened the abscess in the leg, and there found a portion of the broken fibula, from two to three inches in length, exposed and dead,—the consequence of the abscess; and the man died shortly after of secondary deposits in the lungs and in other parts of the injured limb. He, too, was, like the patients under your notice, of intemperate habits.

It is much more satisfactory to the surgeon, however, if these bad complications come on in consequence of neglect on the part of the patient, than if they be attributable to his own ignorance or inattention. There is an instance in the house (if the man's account be correct) of deformity resulting from the inattention of his surgeon, though you must not place implicit confidence in all that patients say on such subjects.

John Doughty was admitted on June 2d into Winchester Ward, with, our notes say, "fulness of the left buttock, and displacement of the head of the femur into the sciatic notch. He cannot straighten the limb; the pelvis moves with the femur; the limb is half an inch shorter than the other: slight pain on pressure. Had a fall ten months ago, and fell on the left side. After the fall he felt and heard the bone move when the joint was tried. He cannot straighten the thigh so as to stand upright, and the knee is advanced before the other; the head of the bone can be felt in the notch, and cannot be moved much in any direction, and the attempt gives pain. He can walk pretty firmly, though lamely, and with much stooping, without a stick."

He tells us that when first seen the hip was not subjected to any examination whatever, but he was treated by his surgeon without this absolutely necessary precaution, so that it is no wonder that the true nature of the

* Subsequently an old disease of the tibia showed itself, and Mr. Hawkins trephined the bone to give exit to the contents of a large abscess in its head, which could not discharge itself, and began to affect his health.

accident escaped observation. He is more fortunate than some patients are who suffer from unreduced dislocation of the hip, in being still able to walk, and there is hope that he may in time regain more use of his limb when a new joint has formed, and the flexors have relaxed as much as they can, and the head of the bone has perhaps become smaller.

If the history he gives be true, it is probable that a simple dislocation of the head of the femur existed, which might at the time have been reduced with ease, but now, after an interval of ten months, while he is regaining the power of using his leg, no attempt ought to be made to replace the bone. Any effort made now would break through such adhesions as have already formed; the old socket is probably partly filled up and obliterated, and unfit to receive the head of the femur, which is itself also, no doubt, much altered in shape; inflammation would be set up, and the patient would be left in a worse condition, and with a limb more useless than it will be if left to nature. There is no exact time which can be fixed upon as the latest period at which it would be proper to attempt to reduce a dislocated limb. After three or four, or five months, you would probably be justified, in the great majority of cases, in declining to interfere. In thin persons you might perhaps find, upon careful examination, that there were no symptoms indicative of a new joint having been formed, or of the acetabulum being altered, and in such persons you might successfully endeavour to replace the limb even six months after the accident.

It is not impossible that in our patient something more may exist than a mere dislocation; it may happen that a portion of the upper and back part of the acetabulum was broken at the time of the accident, and the bone thus allowed to slip backwards from its socket. The difference in the symptoms, if such an occurrence had taken place, would be, that the bone would be capable of being brought back into its proper place with greater ease than in a dislocation, and that upon the extension being removed it would again slip from the acetabulum; and crepitus can generally be felt upon moving the limb. There would be much more mobility also. You have an instance of this accident now under your notice in a patient under Mr. Tatum's care, and in him you may observe that the leg can be brought to its proper length with ease, and the thigh can be flexed, so that the knee will nearly touch the abdomen—a very opposite state of things to the rigid immobility of dislocation such as you see in Doughty. If, as I before observed, the man's account be correct, and the surgeon under whose care he was at the time of the

accident knew of his present condition, his satisfaction with himself would not be very great at seeing a man crippled for life who might, if properly treated, have been possessed of a perfectly sound and useful limb.

I have on two occasions spoken of cases previous to the performance of operations on them. In one, a case of tumor near the knee, no operation was performed, the friends of the patient withholding their consent, and I can consequently say no more concerning it. The other case was that of a man with malignant disease of the testis. In my observations previously made upon this case, I remarked that, although the tumor was malignant in its nature, and that in such cases excision was seldom followed by a permanent cure, on account of the great chance which exists of the disease returning in some other part,—yet that, with a tumor occupying the situation which it did in our patient, and being perfectly insulated (and not, as in scirrhus of the breast, having bands running from it deeply into neighbouring structures), with the tumor itself rapidly increasing, and with the lumbar glands, as far as it was possible to tell, unaffected, and, moreover, with a state of health not very unfavourable for operation,—it was right to perform the operation of castration, and give the patient the chance of remaining, perhaps for a year or two at least, without any return of the disease, and without his present suffering. In this part, especially, one would perform an operation when there was less chance of effecting a permanent cure than in some other parts of the body, because it is one attended with but little risk, and with scarcely a possibility of return in the neighbourhood. It was accordingly done in this patient, after consultation with my colleagues.

Let me now say a word or two upon the operation itself, and afterwards upon the nature of the disease in our patient.

The notes for June 10th are—"Operation for removal of testis performed. An incision was made from the groin to the bottom of the scrotum along the tumor; another incision was then made so as to inclose between the two an elliptic portion of skin. The scrotum was then dissected off from the tumor: the skin was nowhere adherent. Two arteries, from which there was considerable hemorrhage, had to be secured before the cord was divided, and a temporary ligature was passed through the cord to prevent its receding. The cord was then cut through, and the tumor, with the elliptic portion of skin, removed. Numerous arteries had to be tied. The edges of the wound at the upper part were brought together by sutures and strapping: a piece of oiled lint was placed in the lower end of the wound, and the edges brought loosely

together by strapping. The tumor removed was about five inches long, and two and a half in diameter."

I find it noted that the ether was perfectly successful, as, indeed, it has been in almost all the operations performed here.

When you have a large tumor, as this was, to remove from the scrotum, it is as well to remove a portion of skin with it, as otherwise you have the loose skin forming a large suppurating bag, taking a long time to heal, and causing much trouble and inconvenience. Your incision should be made also from the top quite to the bottom of the scrotum, as well to afford facility for the removal of the diseased mass, as to allow of a dependent opening for the ready escape of purulent matter. There was a great deal of hemorrhage during the operation: the vessels that bleed are principally situated in the septum, and the disease causes these to enlarge, so that bleeding to some extent is a frequent occurrence, as you saw in a patient whose testis I removed a few months back. I passed a temporary ligature through the cord before I divided it, as it helps the assistant to hold the cord down so as to enable you to tie its vessels without difficulty. It has twice happened to me that my assistant has let the cord slip from between his fingers; it is an accident of no very great importance, leading only to some additional hemorrhage, but still the delay from the receding of the cord within the inguinal canal is better avoided, and a ligature put through before the division easily prevents it.

The vessels in the cord requiring ligature are sometimes numerous, but sometimes there are two only—the artery accompanying the vas deferens and the spermatic artery itself; they must be tied separately, not with the whole spermatic cord. The method in which I performed the operation was, as you saw, by first separating the testicle entirely from the scrotum, and then dividing the cord, instead of, as is sometimes recommended, dividing the cord, tying its arteries, and then dissecting the tumor out by drawing on the lower segment of the cord. I think the method I used is the most convenient, and the amount of pain and the time required are nearly equal on either plan.

With regard to the dressing after this operation, the putting a piece of lint in the lower angle of the wound is a proceeding which should always be adopted; the interior of the scrotum always suppurates, and as the skin readily unites, if it be allowed to do so, matter gets confined, and you are obliged to make an opening at a later period, besides running the risk of more serious consequences. Two days after the operation you saw that I removed the sutures, and there is no fear but that the man will go on

well as far as the immediate effects of the operation are concerned.

I have very seldom seen any bad consequences ensue from the operation of castration. There may be some immediate danger if there is any enlargement of the lumbar glands,—a circumstance which, as I before observed, may escape the most careful examination. In one case where these glands were enlarged at the time of the operation, I recollect that the patient died with retention of urine and peritonitis, brought on by the very rapid enlargement which the abdominal tumor underwent. The same thing, however, may occur independent of any operation. I have seen it occur, also, so late even as some months after the removal of the original disease in the testicle.

Here is the tumor removed from our patient. It presents you with a very good example of the medullary form of cancer. You see the soft, white, brain-like mass from which it derives its name of encephaloid cancer, with an admixture of numerous cells, as is commonly seen in this part of the body; and you will also observe in it a circumstance which is less often met with. Here is a portion much harder than the rest, and similar in its nature to the scirrhous variety of carcinomatous disease, such as so frequently affects the female breast. The true structure of the testicle, with the exception of a portion of the epididymis, has entirely disappeared, and there is no evidence in the section whether the testis is converted into the new structure, or whether it is only spread over and concealed by it.

Such, then, was the operation, and the examination of the tumor shows that we were right in our opinion of its nature. This case is peculiar, from the enlargement of the mammary gland which exists, and with the nature of which we are not acquainted; the fact of the existence of a malignant affection in one part of the body would render it probable that a tumor in another part was also of the same nature, though its appearance and feeling are more like the simple chronic enlargement which often occurs in younger men. Since the operation it has been getting smaller and softer, and in this respect also it is unlike the progress of scirrhus in the stage in which the mammary tumor of our patient would be supposed to be.*

In my last lecture I spoke of aneurism, and of secondary hemorrhage connected with the ulceration of the coats of arteries. The subject of wounded arteries is also an interesting one, and will be perhaps rendered more so by my placing the two subjects together, and I will therefore proceed

* The conclusion of this case will be given in a subsequent lecture.

to make a few remarks bearing more especially on the treatment which they require. In the first place, then, there is in Wellington Ward, a patient, named Emily Burley, æt. 23, who was admitted on June 7th with "a wound of the left hand, extending from the wrist-joint for about an inch on the outside of the ball of the thumb, and produced by a fall upon a bottle which was broken. There was hæmorrhage to a great extent before her admission; on her admission a branch of the superficialis volæ was secured by ligature, and the bleeding stopped." The next day the edges of the wound were brought together by adhesive plaster, and on the following day she became an out-patient at her own request*.

Here, then, was a simple case of great hæmorrhage from a wounded artery, with the bleeding vessel lying exposed in the wound; the hæmorrhage being stopped by tying both orifices of the bleeding vessel in the wound; and this is undoubtedly the practice proper to be pursued in such cases wherever it is not contraindicated by some peculiarities. To this rule there are very few exceptions, but still some cases will occasionally occur to which it cannot be applied. Thus it will sometimes happen that a patient will have received a punctured wound, and its course may be such that the surgeon cannot make himself certain what vessel it is that is wounded. I remember a case, which came under my notice many years ago, of a butcher, who had wounded himself with a long pointed knife, the wound being situated obliquely at the upper and outer part of the thigh. There was much hæmorrhage, and it was not easy to say whether the blood came from the superficial femoral artery or from the profunda, or from one of its branches, and the wound inflicted by the knife was so small that it could not be known whether the divided vessel was near to the surface, or several inches below the external wound. To have followed the rule I have above mentioned, would have obliged Mr. Ewbank, whose patient he was, to have made an extensive incision and suppurating wound in order to get at the artery, with the chance of dividing other large branches in doing so. The proceeding he adopted instead was to tie the common femoral artery in the groin, and the operation was followed by a successful result. It is questionable, perhaps, whether it would not have been the better practice to have tied the external iliac artery, as there are a smaller number of branches coming off in the immediate vicinity of the ligature in the latter vessel to interfere with the proper closing of its divided ends. Here,

then, is an instance of success following the tying an artery above and at a distance from the wound; and the case of a punctured wound is sometimes one of the exceptions to the rule of cutting down upon the divided artery at the seat of the injury.

There is a circumstance which is liable to deceive you sometimes in cases of wounded arteries, and which, if unnoticed, may lead to mistake in practice. I allude to the fact of the blood from the lower extremity of a divided artery (and it may occur even with an artery of large magnitude) being occasionally quite venous in its appearance, and flowing in the same continuous manner as blood from a divided vein usually does. If you were not aware of this circumstance, you might be inclined to leave an artery without a ligature where one ought to be placed, and so run the risk of secondary hæmorrhage occurring, or of a false aneurism being formed:—as an instance of this, I will give you the particulars of a case which came under my care some years ago. Two young people in this neighbourhood, in consequence of some love affair, endeavoured, it was supposed, to commit suicide by taking poison; and the young lady died, as it was said, from taking Eau de Cologne. With the young man, however, who was a French teacher, the attempt was not successful, and, after the lady's funeral, he very ingeniously tried to destroy himself on her grave by opening the veins at the bend of the elbows; this he did in both arms. He was found in the church-yard, having fainted from loss of blood. He was attended to, for about ten days, by a surgeon, hæmorrhage having repeatedly taken place, which was supposed to be venous;—he was then brought to the hospital. Hæmorrhage, trifling in amount, however, occurred on more than one occasion after his admission, and I was assured by my house-surgeon that it was simply venous. Further bleeding, however, occurring, I did not choose to leave the case any longer to itself, notwithstanding the blood being of the same dark colour, and having stopped when I arrived, and I accordingly enlarged the opening. I found a wound in the brachial artery, involving about a third of its circumference, and it was from this that the hæmorrhage had come. I tied the artery above the wound, but seeing that venous-looking blood still flowed, I was obliged to place a ligature below also. The opening was close to the point of bifurcation, so that I was unable to tie the trunk below the aperture; I accordingly next placed a ligature on the ulnar artery. Still blood flowed, and I was compelled to tie the radial also; thus having to tie three distinct arteries before I could put a stop to a bleeding which had been thought to have been from a vein.

* She was re-admitted at another time, and her case was discussed in another lecture.

The preceding observations bear more especially upon cases in which the wound is recent, and bleeding is going on from it: there is a case of wounded artery in the house, which presents you with a further state of things. Henry James, æt. 28, was admitted, on June 7th, into Oxford Ward, with a "punctured wound, of about one third of an inch in extent, and three-quarters of an inch in depth, situated about three inches above the inner condyle of the femur. On admission, there was some arterial hæmorrhage, which was stopped by a compress of lint, and a bandage round the limb. The accident occurred, as he said, from the slipping of a pen-knife which he was sharpening, and which only passed in for a short distance, though he was afterwards found to be in error; and the direction of the wound was such as to make it probable that only some small artery (the anastomotica, or superior articular,) was injured. The limb was placed on a ham splint.

On removing the bandage the following day, much blood was found to have been effused in the cellular tissue, both of the inner part of the thigh, and the anterior part of the leg; the compress and bandage stopped the bleeding, and this treatment you will find sufficient in three-fourths of the punctured wounds of small vessels. But in our patient, things did not go on so well, and on the 11th, the notes are—"no pain; effused blood softer, except a circumscribed hardness about an inch around the wound: a blush of redness on the edges of the wound." The wound you see putting on rather an unhealthy appearance; the patient was not strong, and had a tremulous tongue, indicative of habits of drinking. The hardness immediately around the wound arose, no doubt, from the effused blood having become in part absorbed, and leaving the principal coagulum more distinct. On the 12th, we find, "There is a drop or two of pus in the puncture, but the deeper part has united. The circumscribed hardness observed yesterday has become fluid, and pulsates distinctly with the thrill of a false aneurism. It is not painful, and is scarcely larger than yesterday. The limb was bandaged from the toes upwards, and straps of plaister were placed round the limb with leather over them, and a screw tourniquet making moderate pressure upon the swelling."

On the 13th, the notes tell us, "Pressure of tourniquet could only be borne for three hours yesterday. Pressure afterwards made by lint and bandages."

Here, then, was a state of things totally different from what was presented to us on his admission. There was a pulsating tumor, in fact, an arterial aneurism, communicating with the wounded vessel, which was probably

only a small artery. The wound having healed in the subcutaneous and muscular tissue, any external hæmorrhage at the time of the formation of the aneurism was prevented, and this formation of a circumscribed traumatic aneurism rendered the case very different from the one we were before considering of hæmorrhage in an open wound. You may see by this preparation that even a very small wound in an artery may produce a large aneurism. In the man from whom it was taken a rupture of all the coats of the carotid took place suddenly (an accident producing all the effects of a wound of the vessel without any external wound in the integuments); and there was a great quantity of blood effused over the neck, sternum, and front of the chest. This became in a few days in a great measure absorbed, and only a small pulsating tumor, about the size of a walnut, was left. A few days afterwards, however, this began to increase, and having broken through the cellular tissue and coagula which at first confined it, attained the size you see in the preparation, and proved fatal by pressure on the trachea; the opening in the artery is, notwithstanding, not larger than the end of a small probe, and might very probably have been cured by tying the carotid artery below it. The question of the practice proper to be pursued in our patient now arises. The treatment of false aneurism is a point upon which there has been much discussion lately, and you will do well to read a paper by Mr. Liston, in the *Medico-Chirurgical Transactions* of last year, which discusses this subject in connection especially with a case of wound received in a duel, about which various opinions have been expressed in the journals and newspapers, many surgeons thinking that the rule justly applicable to a recent open wound of cutting down and tying the artery above and below the wound, was also the proper practice to be pursued for cases in which the wound had healed, and that it was improper to treat a circumscribed traumatic aneurism by the same operation which would be adopted for a common aneurism resulting from disease of the vessel. It is very easy to criticise a case when all the facts are known in consequence of the dissection of the parts, but to me it appears that the operation performed was the right one in the circumstances. There was in this case an aneurism of a different kind from the one in our patient. In James, the wounded artery, whichever it be, must of necessity be a small one, and the tumor can have no connection with the main artery of the limb. Had the wound been situated higher up in the thigh, there might have been some doubt, but occupying the position which it does, there can be no question but that the femoral artery is safe. In Mr.

Liston's case, however, it was not certain with what artery the aneurism was connected; the tumor occupied such a situation that no pressure could be made on the main trunk above, and any attempt to reach the wound in the vessel by opening the aneurismal sac might have proved instantly fatal from hemorrhage. For this reason I think that he was right in tying the iliac artery above, and that it would probably have succeeded but for the accidental occurrence of peritonitis, just as it succeeded in the punctured wound of the thigh under Mr. Ewbank's care. The following case occurred to myself, and seemed to me to be an exception to the rule of tying the artery at the wounded part. Two young men, brothers, were playing, or quarrelling, and one of them received a wound of the fore-arm, in the course of the ulnar artery, from a butcher's knife, which their business required them to use. I did not see him till some days after the accident, and then there was a swelling in the middle of the fore-arm the size of an apple, which had been supposed to be an abscess, the puncture being quite healed; I found that it pulsed, however, and was, in fact, a false aneurism. I at first made pressure over it, and the tumor became smaller, and nearly solid, and seemed likely to go away, but then it again began to increase. I did not like to make an opening among the muscles and other tissues infiltrated with blood, as such a wound is almost sure to become unhealthy and foul. I therefore tied the humoral artery at a distance, the sac appearing circumscribed enough to make it exactly like a common aneurism. The proceeding was followed by a perfect cure; and I think that, by adopting it, you in many cases have a very great chance of being successful, while you avoid much risk which attends a foul wound. Pressure, without operation, may effect a cure in many cases if the opening in the artery be small, and the patient be in a good state of health, so that it may produce no constitutional disturbance. It must (as in all cases where general pressure is used) be applied equably from the extremities over every part of the limb below the tumor, over the tumor itself, and in some degree to the trunk of the artery above, so as to retard, but not necessarily to stop, the current of blood through it. You may recollect a case under Mr. Tatum, about 18 months ago, of aneurism connected with the ulnar artery, which he treated with perfect success by these means.

I have seen at least seven or eight instances of circumscribed aneurism of the brachial artery at the bend of the elbow, the consequence of a wound inflicted during venesection, and in all of them pressure has been

successful. The tumor becomes consolidated, pulsation ceases, and the coagulum becomes absorbed, the vessel being in a few cases pervious, but generally obliterated at the seat of the wound.

Should in any case pressure fail to effect a cure, provided the tumor were not rapidly increasing, from the wound in the vessel being large, or the cyst thin and weak, you may tie the trunk of the artery above. You gain, by doing so, the advantage of having a clean incision in healthy parts to deal with, instead of a ragged wound in tissues infiltrated with serum and coagula, and almost certain to be followed by foul suppuration, with much fever and irritation; and in a great proportion of cases the operation, I believe, will prove successful by this operation, assisted by judicious pressure.

These remarks apply to cases where the aneurism is properly circumscribed. If, on the contrary, the covering of the tumor be thin, so that it is not confined, and is therefore increasing rapidly, or if the wound in the artery is large, and the blood issues with such force as to distend the sac quickly, the case remains like one of wounded artery, and is not to be considered as an aneurism at all. In these circumstances it is right to cut down upon the vessel in the cavity of blood, and tie it above and below the wound in its coats, because the hemorrhage is very likely to go on, and the swelling to increase, even after the main trunk has been tied at a distance from the sac; and a cavity so rapidly filled with blood—that is to say, the blood diffused in the cellular tissue without a proper sac,—is much more likely to suppurate, with the danger of a recurrence of hemorrhage in consequence of suppuration and ulceration, notwithstanding the temporary closure of the vessel by a ligature applied to the trunk above.

The remarks will guide you in some measure to what will most likely be necessary to be done for our patient. The pressure, as you saw, was not borne: the pulsation, our notes for yesterday inform us, still exists, and the wound is even getting more inflamed.

I to-day removed the bandages and dressings, and found that the wound in the skin was a little ulcerated, and there was more redness around, and I think there is great chance that the opening in the muscle will ulcerate, and be attended with hemorrhage. At all events, there is much risk of subsequent inflammation and suppuration opening the tumor, and if pressure to-day does not stop the pulsation and cause coagulation of the effused blood, I shall to-morrow open the aneurism, and tie the artery. The artery is small, and there will be no chance

of dangerous bleeding while doing so; and if the patient were healthy, I should be able to secure it perfectly, and there would be no chance of secondary hæmorrhage; but the same condition of system which has made the wound fester may produce unhealthy ulceration in the coats of the vessel, and give rise to bleeding when the ligatures separate.*

Punctured wounds, independent of hæmorrhage, do not always heal well, and are attended with points of interest. There is a little boy in Winchester Ward, Thomas Pragnell, æt. 15, who was admitted on May 10th, with "abscess over the inner side of the knee-joint, and there is a discharge of thin fluid like synovia, mixed with pus. There is considerable fulness and redness over the inner side of the joint. It was caused by the point of a lead pencil sticking into it four days ago. He has had rigors for the last day or two. The abscess was laid freely open; it does not appear to be connected with the joint, but is quite subcutaneous."

This case illustrates two points connected with the treatment. It was simply an instance of punctured wound not healing, because, as the notes afterwards inform us, there was a small piece of cedar remaining in it. But there is also a note of the oozing of a fluid like synovia from the opening. When an appearance of this sort takes place, you must not at once conclude that it is a proof of an opening into the joint existing. The fat in the living body is in a fluid state, and when its cells are ruptured it runs out; and when mixed with serum, or blood, appears very like the oily fluid you see escape from a wounded joint. This was probably what took place in our patient. I was obliged to lay the abscess open for a second circumstance. When an abscess is situated near the knee, although the opening in the skin may be free, yet the projection of the patella, or convexity of the head of the tibia, may interfere with the ready escape of the pus, and a few drops thus confined may cause an abscess to extend all round the limb. This is to be guarded against by freely laying it open, and our patient is now getting well, with a healthy granulating wound.

There is another case of wound near the wrist-joint now in the house, to which I will direct your attention.

James Heath, æt. 46, was admitted into Oxford Ward, on June 4th, with "a contusion of the left forearm and hand, with a small wound over the wrist, from which there had been some hæmorrhage before his

admission, and from which, when he first came into the hospital, synovia was escaping, as if from the joint between the first and second rows of the carpal bones. Slight grazing of the hand and wrist. No crepitus to be felt. Has been accustomed to drink very much." Here, too, there was apparently synovia escaping, but it was open to the same source of fallacy as the last case. It is better not to examine such wounds near joints too carefully; you do no good by satisfying yourself whether the wound extends into the joint, and you do harm by the irritation produced by the probing. If you suspect that a joint is injured, you must watch the case carefully, and let your treatment be more strict, and rest more carefully enjoined:—perhaps the wound heals, so that you do not know whether it went into the joint or not. Supposing inflammation and suppuration to occur, an incision must be made early, to remove tension, and check the inflammation,—a proceeding equally necessary whether the joint be injured or not.

In this case, the notes for the following day tell us, "there was great pain and swelling of the arm, with much tension and pain on the inside of the wrist; tongue tremulous and white:"—showing, you see, an unhealthy state of system, arising from his intemperate habits; and I increased his diet, and added some porter,—a proceeding which, in such cases, is calculated to diminish rather than to increase the inflammation, particularly if combined with a mildly alterative plan of treatment.

The tension which the notes speak of was rather cedema, and I did not think it necessary to make any incision; and, in fact, it soon subsided under fomentations and chamomile poultices, with stimulant ointment to the wound. Suppuration has since taken place, with the appearance of being mixed with synovia, and in all probability the joint has really been opened. The wrist is free from the violent inflammation which sometimes attends the opening of a large joint, but very likely the inflammation may cause destruction of the cartilage, and a stiff joint; and, as long as the wound remains, there is always danger of fresh symptoms coming on, as of a diseased joint, with the chance of the wrist itself inflaming, or chronic inflammation being left, ultimately requiring the loss of the limb.

[This patient escaped these dangers, and the wound shortly healed.]

* The conclusion of the case will be given in another lecture.

A COURSE OF
LECTURES ON DENTAL PHYSIO-
LOGY AND SURGERY,

Delivered at the Middlesex Hospital School,

BY JOHN TOMES, Esq.

Surgeon-Dentist to the Hospital.

LECTURE XIII.

DISEASES OF THE DENTAL PULP (*continued*).

Granulation or polypus of the pulp—its nature and treatment.—Recession of the pulp.—Diseases of the dental periosteum.—Inflammation, acute and general—chronic and partial.—Symptoms and treatment.

Polypus or granulation of the dental pulp.
—After partial destruction of the crown, and especially of the masticating surface, of a tooth, and the consequent opening of the central cavity, the pulp instead of perishing may become the seat of morbid growth. Rising out of the damaged pulp cavity, you may find a small rounded, smooth-surfaced, vascular tumor, which bleeds from the slightest touch, and constantly emits a most foetid smell; even the blood that flows from it stinks. The new tissue, as compared with the pulp itself, is endowed with but a low degree of sensibility. Slight pressure, or even superficial laceration, produces but little pain (fig. 41.)

FIG. 41.



Fig. 41.—A molar tooth, in which the pulp cavity has been laid open by caries, and the pulp, instead of being destroyed, has become the seat of fungous growth or polypus.

The size to which dental polypus may grow is subject to considerable variety. Sometimes the tumor is small, resembling in size and appearance a large granulation; at others, so large as to cover over and completely hide the wreck of the tooth from the centre of which it has sprung. In the latter case the overhanging portion of the tumor may unite with the gum, and thus bury the tooth in vascular tissue.

Although polypus of the pulp is not

necessarily attended with pain, yet should the new tissue be attacked with inflammation or ulceration, it then becomes extremely sensitive and painful.

Treatment.—The only radical cure is the extraction of the tooth in which the disease has its site. Should, however, your patient object to this measure, (and we cannot always make patients do as we would have them), the tumor may be cut off as low down in the fang as can be reached, and its future growth kept back by the application of astringents. Tannin applied frequently will answer the purpose.

Recession of the dental pulp.—I have already told you that the pulp, under certain conditions, gradually wastes in volume and at last disappears. But there are some cases in which it is gone before we suspect the process of absorption to have commenced. To these I will draw your attention but for a moment, and then we shall have done with the diseases of this small, but sometimes most troublesome, organ.

Patients are occasionally met with who state that their teeth, one after another, have gradually and painlessly decayed away; that they have never had an hour's toothache or even tenderness of teeth, though now nothing but stumps are left in the mouth: in what manner, and when the pulp has been removed, we are unable to tell. All that we know is, that it has gone, and all that it is necessary to know is, what should be done with the tooth so circumstanced.

Diseases of the dental periosteum.—By a natural transition we pass from diseases of the dental pulp to diseases of the dental periosteum. Inflammation and its consequences, modified variously, either by the producing cause or by constitutional peculiarity, or both, form the principal diseases of this appendage of the teeth. To the investigation of these we must now lend our attention, and first of all to inflammation so located. The character of the morbid action may be that of ordinary inflammation, or it may be modified by some pre-existing state of the system. The inflammation may take a rheumatic or a strumous type, in patients afflicted with rheumatism or struma, or it may take its character from the past or present influence of mercury on the system. Then, again, the whole, or only a part of the periosteum may be affected.

It will be best for me to take, first, inflammation of the dental periosteum in its most common, and hence most important forms; namely, active and chronic, and afterwards the various modifications of the disease. Before going further, however, I wish it to be understood that all those cases which terminate in the formation of pus in the alveolar cavity will be placed under the head of *active inflammation*,

while the term *chronic inflammation* will be reserved for those in which the periosteum becomes thickened, the tooth loosened, and the disease in that condition, if left to itself, smoulders on, till at last the tooth drops out. Of course there are many cases of a mixed character, which, in their various stages, belong as much to the one as to the other of these arbitrary divisions; but, with a knowledge of the two extremes, we are prepared for a medium case. Neither is it strictly correct to consider all cases of alveolar abscess as the result of active inflammation, seeing that the disease is often slow, and comparatively painless. Yet we must, for the convenience of description, have some division and arrangement of the subject, and the one I have proposed will suit our present purpose.

Active inflammation of the dental periosteum.—The inflammatory action usually sets in with feelings of slight uneasiness and tension, which sensations are attended with a strong desire to press by the opposing teeth, or to shake with the fingers, the affected tooth in its socket. Slight steady pressure of the fang into the jaw gives relief so long as it is maintained, but the uneasiness returns on its withdrawal. At the same time violent and irregular pressure will produce pain. The uneasiness is soon followed by a dull heavy pain, and the tooth feels to be too long. The desire to push the tooth about continues, till disease has rendered the parts so tender that pressure can no longer be borne, and even the mouth cannot be firmly closed without pain. The tooth seems still to lengthen, and on an attempt to move it from side to side feels slightly loose. These latter symptoms obviously depend on swelling of the periosteum, and consequent lifting of the tooth in its socket. Early in the complaint there is tenderness and swelling of the gum, and generally of the external gum, opposite the fangs, whose periosteum is affected. In addition to this latter symptom, and often prior to its appearance, the free edge of the gum assumes a deep red colour, without either pain, tenderness, or scarcely any swelling. The neck of the tooth appears encircled with a well-defined red ring. I am not prepared to say that this symptom is always present, though undoubtedly it is seldom absent in the earlier stage; but as the disease advances this appearance is lost in the general inflammation of the gum. The pain becomes more severe, but still preserves its heavy wearing character, and, though not always constant, is seldom absent for many hours. These symptoms lasting, the part of the periosteum most highly inflamed, becomes detached from the surface of the fang. The most common seat of this denudation is around the apex of the fang, (fig. 42). Into

FIG. 42.



Fig. 42.—Specimen of an early stage of alveolar abscess. The periosteum at the end of the fang has become inflamed, has separated from the osseous surface of the fang, and the interval thus formed has filled with pus. The sac has been opened and distended, to shew the fang stripped of its periosteal covering.

the interval thus formed pus is poured from the separated surface of the periosteum. The fang at this part loses its vitality, and is bathed in pus, which latter gradually increases in quantity, room being made in the alveolus for the dilatation of the abscess at the expense of the bone. In some of the specimens on the table you will perceive that the bone is closely fitted to the neck of the fang, while about the apex the alveolus is hollowed out into a round cavity large enough to hold a pea. With the formation of pus a process is established for effecting its escape. Either the periosteum becomes detached through the whole length of the fang, and the matter is discharged at the neck of the tooth, or, what is much more common, a hole is formed in the wall of the alveolus, through which the pus gets into the gum. We have then what is commonly called a gum-boil, an abscess in the gum communicating by a small hole through the bone with an abscess in the alveolus. If left to itself the abscess will work its way to the surface, and the contents will be discharged into the mouth. The symptoms now abate, the pain ceases, and the swelling lessens, but a minute fistulous opening in the gum remains, through which a small amount of discharge habitually escapes. The inner surface or coat of the alveolar abscess I have told you is formed by periosteal membrane detached by inflammation, and stretched out from the fang by the gradual interposition of pus. When the abscess breaks, and the contents readily escape, the inner membrane contracts and closes upon, but never unites with, the denuded surface of the fang. While the inner surface of the abscess contracts upon the fang the outer parts thicken and occupy the space which would otherwise be left between the abscess and the walls of

the expanded alveolus. If a tooth be drawn after this has occurred, the coats of the abscess often come out adherent to the fang in the form of a fleshy appendage, and the tooth is said to have a fungous growth from the fang (fig. 43). Reunion between dental

FIG. 43.



Fig. 43.—Specimen of alveolar abscess between the fang of a molar tooth, in which situation a portion of the tooth was necrosed. In removing the tooth, the abscess came away entire, as represented in the figure.

tissue and periosteum separated by disease, I believe never occurs. On the contrary, the denuded and consequently dead tooth substance, when in contact with, proves a constant source of irritation to the living and already diseased periosteum; hence, the lasting discharge and consequent fistulous opening. The quantity and the quality of the continued secretion varies. Sometimes it is almost imperceptible and serous; at other times it is abundant and purulent; varying in different individuals, and in the same individual at different times.

Such is the course which active inflammation of the dental periosteum usually pursues when left to itself.

The disease may, however, assume a much more active character; all the symptoms may be aggravated, and, in addition to which, there may be considerable symptomatic fever.

The following case occurred in the person of a medical practitioner, and will give you a good idea of the severity the disease may assume:—

CASE.—T. S., age 30. In 1840, the crown of the left central incisor was broken off by a blow from a cricket ball; I refixed the crown by a pivot. In 1844, the crown had become discoloured, and was replaced by the crown of a mineral tooth. The dentist who performed the operation found it necessary to increase the length of the hole in the stump, for the reception of the pivot. This was done on the 8th of October; on the morning of the 10th, slight pain was felt about the root of the tooth. Towards evening, the pain had greatly in-

creased; the pivot was then removed. The night was passed in pain, and without sleep, and in the morning a fit of cold shivers was followed by heat, and terminated in profuse perspiration. 11th.—The pain still increasing, and attended by cedematous swelling of the face; added to which, there was great symptomatic fever. Pulse 130, full and hard, and accompanied by headache; twenty ounces of blood were taken from the arm, and salines were administered. Fomentations were applied to the face, and a dose of Dover's powder given at bed-time. 12th.—Considerable and extending inflammation of the mouth near the pivoted tooth; more swelling of the face; headache rather less severe; six leeches were applied over the gums; blood taken yesterday rather buffy. 13th.—Swelling and pain much the same; a small abscess formed in the roof of the mouth, near the tooth. This was opened. The fomentations were continued, and the Dover's powder repeated at bed-time. 14th.—The abscess in the roof of the mouth was again opened, and a considerable quantity of purulent matter let out; the inflammation, pain, and swelling, much the same; six more leeches were applied, followed by fomentation and poultice; the Dover's powder repeated at night. 15th.—Symptoms no better; three more leeches were applied to the gums, and the fomentations were continued. 16th.—From this time the symptoms gradually abated, but left a small abscess over the stump, from which a considerable quantity of pus escaped.

On the 5th of November he applied to me. There was still pain in the stump; the gum was swollen, and pus escaped from an opening opposite the end of the fang, which, on removal, was found to be discoloured, and evidently dead. The operation was followed by the escape of a quantity of unhealthy pus. From this moment no further inconvenience was felt; the gum healed, and the whole mouth returned to a state of health.

The stump was not transfixed by the second operation of pivoting;—I mention this because I have seen several cases where a similar course of events have followed the transfixure of the fang in the operation of pivoting.

An equally instructive case, in which the disease was cut short, occurred in the son of the hospital carpenter, a lad of 14 years of age. He was attacked with severe pain in the canine of the upper jaw on the right side. The tooth was perfectly sound. The pain increased in severity for six-and-thirty hours, and the tooth then felt too long, and was greatly in the way when he closed his mouth, from the pain that was occasioned whenever it was touched by the opposing teeth. There was considerable headache, thirst, and a loaded tongue, and the boy

said, "he felt almost light-headed at times." I removed the tooth, and found the fang everywhere coated with thickened and inflamed periosteum. The pain ceased with the smart of the operation, and there was no return of suffering. Had this tooth been allowed to remain, the case would, no doubt, have followed a similar course to that I just now described. An abscess would have formed in the alveolus, and, after more or less suffering, opened on the surface of the gum. The specimen is before you, and you may contrast for yourselves the diseased of this, with the healthy periosteum of other teeth.

Original Communications.

REMARKS ON PNEUMONIA, WITH CASES.

BY R. H. A. HUNTER,
Surgeon, 57th Regt.

SEEING your columns so occupied with valuable matter, I ought to apologize perhaps for troubling you at present.

Reverting to the subject of pneumonia, however, discussed at a meeting of the South London Medical Society in May last, and reported in your number of the 28th, permit me to say there is an important omission to the country reader, viz. when the cases referred to occurred; for though very frequent with us last summer, and up to the end of January, at Chatham, at Canterbury, and at Dover, I have only seen one recent case since of the least moment, and that so differing in some respects, that I take the liberty to enclose it, with three of the others to compare.

There is an error, also, I think, in what Dr. Todd said of the blood; for in all our cases, almost, and our opportunities for making such observations are very great, the coagulum is reported to have been flat, and often not separated from the sides of the vessel. To shew this, a table is added, taken from ten of the worst cases, treated and recorded by myself, so that I can vouch for their accuracy: the vessel might, no doubt, make a difference, and so I have noted it.*

* The same disease (Pleuro-pneumonia) I see is at present extensively prevalent among horned cattle; and, were I not to be thought fanciful, I would say, may not this same epidemic constitution have been the true "Aphis vastator?" Similar organs, to wit, the leaves, would appear to have been primarily affected.

No. 1, *Pneumonia*.—Canterbury, 28th October, 1846.—T. T., æt. 27: melancholic temperament, and slender frame; complains of acute lancinating pain in right side, (points about an inch below the nipple,) with teasing cough, and scanty, adhesive, bloody expectoration; skin hot; tongue furred; thirst; anorexia; bowels regular; pulse 108; respirations 36; decubitus on left side leaning forward,—cannot lie on right. States that for some weeks past he has had a slight cough, but that two mornings ago he was seized with a distinct rigor or shivering, which lasted the greater part of the day, followed by a pain in right shoulder, and, to-day, by that in right side.

Physical Signs.—Condition good; countenance dusky and distressed; feeble or indistinct murmur, with dullness on percussion over all the right subscapular region, and, anteriorly, up to nipple, with broken, reedy, vocal, resonance, or bronchophony, under the point of the right scapula. V.S. ad. 3x.; Calomel. gr. xx. c. Opii gr. ij. stat.; Solut. Tartarizat. 3ij. 2da. qq. hora; Meridie; Calomel, gr. iij.; Ant. Tart. et Opii aa. gr. ss. 4tis qq. hora. *Vespere*.—Became faint at 3x.; clot quite flat, and only at one point separated from vessel, but covered with a buffy coat, a quarter of an inch thick; appearance vastly improved, and feels much better, only very weak; skin hot, inclined to moisture; pulse 88; respirations 26; expectoration more copious; tough, frothy, mucus, mixed with blood.

29th.—Slept well; can now cough, or take a full inspiration, without pain; skin hot, moist; tongue furred; bowels free; pulse 88; respirations 25; dullness on percussion over all the right subscapular region, but murmur more distinct, with copious moist crepitous rale on forced inspiration; bronchophony at point of scapula, but penetrating reedy character gone. Mist. expectorant, 3ia. qq. hora; Cont. Calomel, Ant. et Op. M.

30th.—Decubitus on back quite easy; scabby eruption on upper lip: cough, with rusty, thin, jelly-like expectoration; skin cool, moist; tongue furred; pulse 60; respirations 22; slight sonorous rale in right scapular and submammary regions, with subcrepitous in lateral and subscapular. Emp. Lytta. Sub-Mammar. dext.; Cont. Pil. et Mist.

Nov. 4th.—Blister not yet healed; no pain, but slight cough, with thin mucous expectoration; skin cool; tongue loaded; bowels active; pulse 60. Cont. Mist.

7th.—General appearance greatly improved, but murmur still rather obscure in right subscapular region; pulse 56.

8th.—Convalescent.

12th.—Discharged to duty.

No. 2, *Pneumonia*.—Dover, 26th January, 1847.—T. H., æt. 38: nervo-choleric temperament; admitted last evening, with pain in left side, headache, and general feverishness; which he reports to have commenced at 9, a.m., with shivering.

Feels better this morning; skin hot; tongue tolerable; thirst; bowels active; pulse 104. A little rhonchus in left chest; murmur generally rather sonorous: had last evening, Calomel, gr. vj.; Pulv. Jalapii, gr. xv.; Solut. Tartarizat. 3 j.; 2da. qq. hora.

Vespere.—Calomel, gr. v. c. Antimon. Tart. gr. ss. h. s.

27th.—Still complains of headache, but with very little cough or expectoration; skin hot; tongue loaded; bowels active; pulse 96; respirations 30; feeble murmur in left subscapular region, with copious equal crepitation after coughing; puerile in left subclavian, and more or less sonorous over the rest of the chest. V. S. ad. 3xvj.; Calomel, gr. iij. Ant. Tart. et Opii aa. gr. ss. 4ta qq. hora, vice alterum cum Misturæ Sequent. 3iv.; Mucilag. Tenuis, 3viij. Vini Antim. 3iv.

28th.—Blood covered with a tough buffy coat, and cupped; still acute pain at left lower cartilaginous border; skin hot; tongue loaded; pulse 88; dulness on percussion in left subscapular region, with feeble murmur, mixed with crepitus; expectoration scanty and adhesive. Cucurbit. Cruent. Subscapulari Sinistræ; Emplast. Lyttæ lateri applicetur. Continuentur aliq.

29th.—Easy, but low and faint; expectoration rusty; pulse 96. Pergat.

31st.—Low, but easy; copious tough adhesive expectoration; skin pretty cool; tongue cleaner; bowels active; pulse 96; respirations 30, labouring; dulness in left subscapular region, with copious thin crepitus at point of scapula; bronchophony and blowing

expiration; lips scabby, and general surface yellow. Mist. Expectorant, cum Ammon. Carb. Omitt. Pil.

Sept. 3rd.—Short hiccup since yesterday, but at present calmly asleep, obliquely, on right side; tongue clean; pulse 90; Cont. Mist. sine Ammonia Carb.

4th.—Still hiccup, but with intermissions. Pulv. Rhæi C. gr. xv.

5th.—Still hiccup at interval; thick vesicular scabby eruption on lips; tongue clean, moist; bowels active; pulse 92; thick muco-sanguineous expectoration, partly mixed, partly separate. Pil. Plumbi Comp. (Edin.) ter die; Rept. Mist. c. Ammonia.

6th.—No hiccup since last evening; expectoration scanty, and a thick white mucus streaked with blood; skin cool; pulse 80; lips very sore and scabby.

7th.—Scarcely any return of hiccup; expectoration a thick tough mucus without blood; skin cool; pulse 80; respiratory murmur still feeble in ordinary inspiration in left subscapular region, but distinct on forced, with slight crepitus as before at point of scapula; resonance tolerable. Pil. bis die.

9th.—No cough; no hiccup; skin cool; tongue clean, moist; bowels active; pulse 78. Continetur Mistura; Omittantur alia.

10th.—Respiration still rather feeble in left subscapular region, and expiration sighing; no rale; pulse 72.

14th.—Convalescing rapidly, and looks quite fresh; scabby eruption nearly gone. Nil.

18th.—Quite well; discharged at request, being a married man.

No. 3, *Broncho-pneumonia*.—Canterbury, 5th November, 1846.—J. C., æt. 18: melancholic temperament, and short, weakly, frame; strumous aspect; complains of acute headache, which he reports to have commenced at 8, a.m., with rigor. Had been quite well previously; skin hot; pulse 112. V.S. ad 3xx.; Calomel, gr. x. c. Opii, gr. j. stat. cras mane; Solut. Tartarizat. 3ij. 2da. qq. hora.

6th.—Did not become faint, but whilst the blood was flowing he suddenly complained of an acute pain under the sternum; first cup scarcely buffy, second fluid, and quite flat; still complains of acute headache, and pain

in his chest, and cough, with copious frothy bloody expectoration; skin hot; tongue red and dry; bowels open; pulse 140, small and weak; respirations 54, short, and interrupted with mucous rattle in the throat; auscultation very imperfect, as he cannot bear to be moved. Pulv. Ipecac. ʒj. stat.; ʒ Calomel, gr. iij. Ant. Tart. et Opii aa. gr. ss.; M. ft. pil. 4ta. qq. horæ sumenda.; ʒ Mucil. Acaciæ Ten. ʒviiij.; Vin. Antim. ʒj.; Tinct. Opii Camph. ʒij.; M. ʒiv. 3ia. vel 4ta. qq. hora.

Vespere.—Emetic scarcely operated, but feels much better, and has had some sleep; pulse 120. Emp. Lyttæ sterno.

7th.—Head greatly relieved; skin hot; tongue loaded, pasty; thirst urgent; pulse 96; resp. 32, thoracic; murmur anteriorly, pure and full, but cannot bear to be turned. Expectoration partly a rusty mucus, adhering to bottom of vessel, partly a bloody froth. —Cont. Pil. et Mist.

8th.—Less cough; expectoration a bloody mucus in separate masses; skin hot; much thirst; tongue loaded, dry; bowels open; pulse 96; resp. 28; decubitus on back.—Pergat. *Vespere* —Pulv. Ipecac. gr. xx. h. s.

9th.—Did not vomit, but bowels were freely moved in the night; expectoration more copious—a tough frothy mucus tinged with blood; skin hot; tongue brown and dry; pulse 112; resp. 46.—Sinapis. sterno.

10th.—Appearance fresher, and expectoration less coloured; skin hot; bowels relieved; pulse 108; resp. 52, thoracic; murmur puerile anteriorly.

11th.—Cough all night in paroxysms; expectoration a copious tough stringy mucus, a little frothy at surface, and tinged with blood; decubitus on back, with short and plaintive moaning; tongue much loaded, but moister; pulse 112, full and sustained; resp. unsteady, but about 40.—ʒ Liq. Acet. Ammon., Mist. Camphoræ, aa. ʒij.; Ammon. Carb. ʒss.; Aquæ Fontanæ, ʒiv. M. ʒj. 3ia qq. horâ; Emplast. Lyttæ sterno. Cont. Pilulæ.

12th.—Has had a better night, and was quietly asleep at the visiting hour. Pulse 84; resp. 30; expectoration frothy and pituitous, without any tinge of blood.

14th.—A tolerable night again. Expectoration copious, white, and frothy; skin warm; tongue cleaning;

bowels active; pulse 94; resp. 36.—Cont. omnia.

17th.—Skin warm and moist; pulse 100; resp. 32; murmur high and pure anteriorly; in subscapular regions choked with mucous rale, and in left mixed with sonorous. Exploration still imperfect.

20th.—Gums red and swelled, but not sore; pulse 88; dulness in right sub-capula, and murmur masked with mucous rale.—Emp. Lyttæ hypochondrio dextro.

23d.—Countenance lighted up; skin quite cool; tongue tolerable; pulse 72.

29th.—Convalescent.

Dec. 7th.—Discharged to duty.

Weedon, 4th July, 1847.—J. P., æt. 31, choleric temperament and strong frame: admitted 10 A.M. with acute pain under point of left scapula, cough, and tough frothy sanguineous expectoration. Appearance anxious and distressed; skin hot; pulse 104; resp. 40; strong effort without corresponding murmur anteriorly; dulness over a space three inches in diameter in left scapular region, and large mucous rale. States that on the 2d, after working hard all day, he walked five miles into the country; then felt quite well; but, when going to bed, was suddenly seized with violent rigor and pain in left shoulder, which last, towards morning, shifted to its present seat. Was very ill all yesterday, but now much worse.—V. S., dein Cal. gr. xx.; c. Opii, gr. ij.; Solut. Tart. ʒij. 2da qq. horâ.

Vespere.—Became faint after 6 oz., but rallied again, and bled freely to 24 oz., when the stream again failed through faintness nearly in the recumbent posture. Coagulum (in two flat graduated vessels) flat, and filling the vessel, the serum floating above.—Cal. gr. vi. c. Tart. Ant.

5th.—Pain and cough continue, with sanguineous mucous expectoration. Skin hot; pulse 104; resp. 40. Crepitous rale, bronchial respiration, and bronchophony in left subscapular region.—ʒ Calomel, gr. iij.; Antimon. Tartarizat. et Opii aa. gr. ss. M. Fiat Pilula 4ta qq. horâ sumend.; Mist. Sequentis, ʒj. alternis vicibus; ʒ Liq. Acet. Ammon., Mist. Camph. aa. ʒij.; Vin. Antimon. ʒiv.

Vespere.—Pain increased. Pulse 96, strong and bounding.—V. S., Cont. Alia.

6th.—Became faint at 14 oz.; coagulum flat, not separated from vessel, but covered with a thick leathery buff. Pulse 100, small; resp. 28.—Pergat.

7th.—Expectoration now very rusty, tough, and frothy, not adhering; skin hot, moist; pulse 104; resp. 30, thoracic; dulness on percussion, and crepitous rale over all the left subscapular inferior portion of scapular, lateral, and mammary regions; puerile murmur over all the right.—Empl. Lyttæ.

8th.—Countenance dusky; tongue loaded; pulse 108, quick and tense; resp. 35; bronchial respiration only audible in left subscapular region; still a little crepitus in scapular.—Pergat. Vesp.: Pulv. Ipecac. ʒj. h. s.

9th.—Perspiration in large drops over the forehead (rather bald), and frontal and temporal veins very full and tense; pulse 120, flagging; resp. 36, abdominal. Did not vomit from the ipecacuan.—R. Mist. Camph. et Liguoris Acet. Ammon. aa. ʒij.; Ammon. Sesquicarb. ʒij.; Aq. Font. ʒiv.; M. ʒj. 3tis qq. horâ.

10th.—Gums not sore: pulse 132; resp. 46; resonance of right chest anteriorly normal; that of left, plus, hollow or semi-tympanitic; abdominal resonance scarcely abnormal.—Cont. Mist.; Spirit. Com.

11th.—Sitting up, picking as it were insects from the bed-clothes, or lying on his back, panting. Skin hot; pulse 143; resp. 80. Copious thin purulent rale over the left chest posteriorly. (Advantage was here taken of his sitting up). Nature of fluid quite evident. Died at 7 P M.

12th.—Autopsy.—Left chest: a narrow oblong pleuritic cavity in mammary region, filled with greenish serum; two small, similar, between the lung and diaphragm; close adhesion with very thick false membrane over a space two or four inches in diameter at apex; lung quite solid, with the exception of a small portion superiorly and anteriorly, and exuding copiously, when cut, a thin reddish purulent matter, easily scraped up in large quantities with the knife. Right lung everywhere yielding and crepitous, though much congested with bloody serum; heart much distended; liver tore posteriorly and inferiorly on being removed, but size and colour normal. No other morbid appearance.

TABLE SHEWING THE STATE OF THE BLOOD, ETC., IN TEN CASES OF PNEUMONIA.

Date.	Name.	Rigor.	Blood cupped?	Blood buffy?	Labial Herpes.	Nature of Sputa.	Portion of lung chiefly affected.
May 15	W. Rooney	Chills	1st cup, slightly—2d, No.	Yes	Not noted	Frothy, tenacious, and bloody	Right lower lobe
July 1	P. Hillier	Yes	No	Yes	Yes	Mucous and tenacious	Left lower lobe
" 13	T. Gilbert	Yes	2d day, No.—4th, slightly	Yes	Not noted	Mucous and bloody	Right upper
" 18	P. Hugan	Yes	No	2d day, No—3d, yes.	Not noted	Mucous and bloody	Right inferiorly
August 5	J. Robertson	Yes	No	Yes	Yes	Mucous and rusty	Right lower
October 28	T. Townley	Yes	No	Yes	Not noted	Mucous and bloody	Right lower
November 5	J. Curran	Yes	No	1st cup, slightly—2d, No	Not noted	Rusty and adhesive	Right lower
1847. Jan. 25	T. Purfitt	Yes	No	Yes	Not noted	Rusty and adhesive	Left lower
" 26	T. Hampshire	Yes	Yes	Yes	Yes	Mucous and adhesive	Left lower
July 4	J. Parsons	Yes	No	2d day, No—3d, Yes	No	Sanguineous, mucous, & bloody	Left lower*

N.B.—Day reckoned from rigor, not period of admission.

* All the patients recovered except the last, (J. Parsons,) who died on the ninth day; left lung in third stage; right, healthy.

ON THE
NATURE AND PRINCIPLES OF TREAT-
MENT OF INFLAMMATION,
AND THE ALLIED DISORDERS OF THE
CIRCULATION.

By GEORGE ROBINSON, M.D.

Fellow of the Royal Medical and Chirurgical Society, formerly Lecturer on General Pathology in the School adjoining St. George's Hospital, and now Lecturer on Forensic Medicine in the Newcastle-on-Tyne Medical School.

[Concluded from p. 154.]

PART XII.

Of the Treatment of Inflammation.

THE preceding remarks have had reference solely to the treatment of acute or sthenic inflammation; but before dismissing the subject, it is necessary to make a few observations upon the management of the opposite forms of the disease. Chronic inflammation, whether occurring primarily, or as the effect of an acute inflammatory attack, is invariably connected with a relaxed condition of the affected vessels; and this impaired tone of the capillaries of the part is, in the former class of cases, generally complicated with a debilitated state of the constitution. Although, therefore, this complaint undoubtedly presents a tendency to effusion indicative of an unnatural increase in the lateral pressure of the retarded blood-columns, our attention must here be fixed rather upon the defective tone of the contractile tissues which occasions that local retardation of the circulation, than upon the physical disorder of the blood resulting from its existence. The pathology of this form of the disease is, indeed, correctly represented by that doctrine of inflammation which refers its causation to a relaxation of the coats of the capillaries, followed by an accumulation and tendency to coagulation of the impeded blood. And the existence of the slight impeding cause constituted by that extreme capillary relaxation, will necessarily tend to induce and maintain, throughout the whole extent of the affected vessels, a constant but moderate lateral pressure of the detained fluid, sufficient to occasion its partial exudation through the porous capillaries, without, at the same

time, morbidly exalting the sensibility of the part.

In accordance, then, with these views of the nature and causation of the disorder, the chief object of our treatment must evidently be the re-invigoration of the affected vessels, and, if necessary, of the whole system; and by the adoption of this course the physical disorder of the enlarged and retarded columns of blood will in general be effectually removed, and its effects obviated. The treatment of asthenic inflammation is, therefore, based upon a precisely opposite principle to that which claims our chief attention in the management of the acute disease. In the latter, the power of the heart, and the resulting pressure or impulse of the arterial blood being very considerable, our first step is to diminish the amount of that pressure by the use of debilitating agents, and thus prevent any serious local injury resulting from the extravasation of blood, or effusion of liquor sanguinis. But in the primarily chronic, or asthenic forms of the disease, the lateral pressure of the detained blood is comparatively inconsiderable; and though it may, in certain situations, be productive of copious serous effusion, or even fibrinous exudation, there never can be the same necessity for, nor will the system endure, anything like the active depletory measures demanded in cases of acute inflammation. There is, in short, this essential difference in the causation of the two varieties of inflammatory disease, that in the one form—the sthenic or acute—the debility or relaxation of the capillaries of the affected part is an effect of the physical disorder, or morbidly increased lateral pressure of the contained blood; while in chronic inflammation, occurring as a primary disease, the relaxation of the capillaries, by constituting a slight impediment to the blood's passage through them, operates as the cause of the accompanying physical disorder of that fluid. In treating this latter disease, we must, therefore, rather address ourselves to the removal of the primary obstructing cause, the relaxation of the affected capillaries (which is fortunately to a great extent remediable), than seek, by depletory measures, to relieve the accompanying physical disorder of the blood, which is but an effect of that obstruction.

The means by which we attempt to restore to their natural condition the relaxed capillaries consist either in the direct application of astringents, stimulants, or mechanical support, or in the administration of remedies calculated to give tone to the whole system.

The employment of local remedies is of course necessarily restricted to those cases in which the disease affects structures situated near to the surface of the body. But where they can be used, as in affections of the conjunctiva, of the throat, of the rectal, vaginal, and urethral mucous membranes, and of the cutaneous and subcutaneous structures, their beneficial influence in expediting and frequently completing the recovery is daily exemplified. In the majority of cases of chronic inflammation, and particularly in those forms of it which occur idiopathically, and not from the application of any local irritant, it will, however, be found necessary to adopt measures having for their object the improvement of the general health, and the restoration of their natural vigour or tone to the contractile tissues of the body: and as a preliminary step, it is in these cases always advisable to search for, with the view of removing, any debilitating causes to which each individual may have been particularly subject. For not only are the *general* causes of debility already sufficiently numerous and (from the miserable and half civilized condition of a large proportion of the population, and the want of proper social legislation) apparently on the increase, but each class of the community is more especially exposed to certain more or less peculiar to itself. On the present occasion it is, of course, impossible to do more than allude to these injurious agencies, but it may be observed that they all involve a partial deprivation of one or more of those essentials to health which have long been pointed out by medical writers, and the chief of which are pure air, regular exercise, a sufficiency of wholesome nourishment, and the means of maintaining the natural temperature of the body.

Having, then, attended to those circumstances of diet and regimen, without which the administration of medicines will be of little avail, we may proceed to give such tonics as the state of the constitution more particu-

larly demands. And here great advantage will be experienced from a knowledge of the peculiar diathesis of the individual, and of the nature and cause of any derangement in the quality of the blood. If there be merely an impoverished condition of the circulating fluid, a generous diet, assisted by chalybeates and aromatic tonics, will generally suffice for its restoration to a healthy state. And in cases where the relaxation of the capillaries, and the tenuity of the blood, are so extreme as to cause copious fluxes or extensive serous effusions, these measures may be joined with the internal administration of astringents, such as the mineral acids or acetate of lead.

If, on the other hand, from the appearance of the individual, from the structure affected, and from the history of the case, we have reason to suspect a tendency to the exudation of scrofulous matter, more benefit may perhaps be experienced from administering, instead of, or in addition to the other remedies, some preparation of iodine or any other substance that may appear calculated either to prevent the formation, or facilitate the removal, of that diseased albumen. So, likewise, in cases of rheumatic, syphilitic, and erysipelatous inflammation, must our treatment embrace as its chief object the removal of the peculiar disorder of the constitution, or of the blood, which originates and maintains the local disease.

In this brief sketch of the treatment of chronic inflammation nothing has been said of the use of counter-irritants or of local blood-letting; where this latter remedy can with propriety be adopted the case must present more of a sthenic character than those which we have lately been considering, and in its treatment we must therefore be guided by the same principles which regulate the management of the more acute forms of the disease. And, as regards counter-irritation, a remedy of very great utility in the treatment of internal or deep-seated chronic inflammation, the benefit resulting from its employment is often so much greater than can be explained by its purely physical action as a derivative, that we are, I think, almost compelled to adopt to a certain extent the ancient idea that these artificial

sores act as drains for the discharge of vitiated fluid from the blood.

These, then, appear to me to be the general principles on which the treatment of inflammation is to be conducted; and they are, I think, in perfect unison with what we know of the nature and causation of that disease. The extent to which, in each particular case, depressing or strengthening measures are to be pursued, must, of course, be left wholly to the judgment of the practitioner, and the greatest care and circumspection are in some cases required to enable us to arrive at a satisfactory conclusion on this important question. In applying to practical purposes the pathological views contained in the preceding part of this communication, I have, therefore, ventured to dissent in toto from those who think that all cases of inflammation are to be treated on *antiphlogistic* principles.

There doubtless still remain for investigation some obscure points connected with the nature and mode of action of the exciting causes of inflammation; and, as regards the peculiar circumstances which determine the production of its secondary effects, we may be said to know nothing with certainty. But as these questions, though constituting interesting and important ramifications from the general subject, need not necessarily be mixed up with an inquiry into the essential nature of inflammation, I have, on the present occasion, refrained as much as possible from entering upon their consideration.

The pathological views now advanced are, to a considerable extent, based upon those views of the physiology of the circulation which formed the subject of a former paper. There has, indeed, long existed an impression among those who have studied the actions of the living body, that the minute arteries effuse, and the venous radicles absorb: but, with the exception of that previously alluded to, no attempt has been made to discover the mechanism of either process, nor has the fact itself been established either by actual observation or physical reasoning. The former proof, though perhaps some day attainable, is not yet capable of being exhibited. But a judicious application of the principles of hydraulics to the explanation of the

functions of the minute blood-vessels, does, I think, justify us in concluding that, during the existence of the circulation, a slow but constant *extra-vascular current* is, as a general rule, every where flowing from the arterial to the venous portion of the capillaries, and thus effects the nutrition and purification of the different tissues of the body.

To some these ideas may perhaps appear too purely mechanical; but they are not more so than that which supported by similar principles of reasoning, enabled Harvey to anticipate the evidence of the senses. And, for my own part, I cannot understand how any doctrine can be *too* chemical, or *too* mechanical, *if it be but true*. No one can wish to introduce the spirit of sectarianism into science; and, as nature will neither change nor suspend her laws to suit our prejudices, it behoves us, before rejecting any new views on an obscure but important question, to advance against them some stronger argument than their mere antagonism to, or incongruity with, received opinions.

But the adoption of these views by no means implies the recognition of an exclusively mechanical system of physiology; for no one can be more willing than myself to confess the immensity of the distinction between living and dead matter, or to admit that the minutely-varied physical and vital endowments which characterise the different component tissues of each animal body, can only originate in a *creative* power infinitely superior to the laws regulating the phenomena of the inorganic world.

Any attempt at dispelling the darkness which has so long obscured the physiology and pathology of the circulation, must, in a great measure, be necessarily founded upon physical reasoning; and, as all physiologists are not even yet prepared to admit that the motion of the blood is a purely mechanical action, it is not wonderful that, at the end of two centuries, our knowledge of its uses, and of the diseases which result from its derangement, should continue to be very imperfect. May we not, indeed, still say, with an intelligent physician of the last century—"It must be confessed that the discovery of the circulation has not been followed by so great

advancement in the science of medicine as was naturally to have been expected from it. The reason of which is, that our theory has not yet advanced much in the knowledge which is naturally founded upon this grand principle—the *circulation*. It has not yet explained the epicycles, as I may be allowed to call the partial systems and various relations of parts, both fluid and solid, on which the anomalies of the body, the nature of diseases, and the operations of medicines, must depend. Had Newton only discovered the general operation of gravity upon all matter, and barely hinted that the motion of the planets must depend upon it, philosophers had then understood the system of the world nearly as well as we do now the system of the body.”*

The want of zeal thus manifested in the study of perhaps the most beautiful phenomenon in nature, and certainly the most important action of the living animal, will doubtless excite the astonishment of after ages; and it were well for mankind if the causes which have thus retarded the growth of medical science were no longer in operation. The truth would seem to be, that, notwithstanding all the praise and honours which have been heaped upon Harvey's name and memory, his principles of philosophy have never been really popular. Nor is this at all inexplicable, when we, on the one hand, consider the influence which fashion exercises in encouraging or discouraging certain lines of investigation; and observe, on the other, the very slight connection between devotion to the science of medicine, and success in its pursuit as a profession. Even the scanty information now possessed on this subject (much of which is but a revival of old opinions) has been chiefly obtained by the labour of Continental physiologists, and more especially of that illustrious school which owns Magendie as its founder. Nor, with the exception of Hales (a clergyman), can any of Harvey's fellow-countrymen be said to have materially contributed to the illustration and extension of his grand principle. And yet what other field of inquiry offers an equal prospect of obtaining

brilliant and important results? The nature of the intimate connection shewn by experiments to exist between the circulation of the blood and the manifestation of the higher functions of the nervous system, the dependence of calorification, and of the various purifying actions of the body upon the incessant continuance of that motion, —these and many other problems, the solution of which would be equally interesting and useful, all call for investigation. And who can take upon him to declare that the laws which regulate those phenomena will for ever remain inaccessible to patient observation, assisted by experiment, and conducted by strict, unprejudiced reasoning, to the establishment of sound and logical conclusions? Nor has anatomy yet ceased to unfold the varied structural arrangements by means of which nature is enabled to produce with one cause an infinity of effects; for every year brings with it an account of some minute mechanism, some beautiful contrivance, each admirably adapted, by means the most simple, to the accomplishment of ends the most elaborate and important. And who can say how many more such which the eye of man hath not yet seen, and all the uses of which the understanding of man shall perhaps never fully comprehend, may still exist, buried and concealed in the dark nooks and unexplored recesses of the animal body?

While meditating, then, upon the immeasurable benefits which his discovery would ultimately confer upon mankind, and thus gathering by anticipation the glory which would redound from it upon himself, his profession, and his country, well might Harvey exclaim, in a burst of lofty and almost prophetic enthusiasm — “Denique in omni parte medicinæ, physiologicæ, pathologicæ, semeioticæ, therapeuticæ, cum quot problemata determinari possint ex hac datâ veritate et luce, quanta dubia solvi et quot obscura dilucidari, animo mecum reputo, campum invenio spatiosissimum, ubi longius percurrere et latius expatiari adeo possum, ut non solum in volumen excresceret, præter institutum meum, hoc opus, sed mihi forsan vita ad finem faciendum deficeret.”*

* An Epistle to the Rev. Dr. Hales, introductory to an Essay on the Blood, by Richard Davies, M.D. : Bath, 1759.

* e motu cordis, cap. xvi.

ON THE
CONSTRUCTION OF THE PLACENTA,
AND THE MODE OF COMMUNICATION
BETWEEN THE MOTHER AND
THE FŒTUS IN UTERO.

By FRANCIS ADAMS, LL.D., Surgeon,
Banchory.

[Concluded from page 383.]

DR. J. REID has the merit of being one of the first to describe the placenta with the aid of the microscope, after the use of this instrument in physiological investigations had been revived. His views amount to this,—that the placenta consists of a congeries of umbilical vessels, *which terminate in blunt extremities on its surface*, and that it is divided on its uterine surface into a multitude of “tufts,” which enter into the sinuses of the mother, these tufts being covered externally by a thin membrane derived from the mother, “consisting of a reflexion of the inner coat of the venous system of the mother, or, at least, of a membrane continuous with it.” He seems to hold that, at delivery, these tufts are often broken off, and portions of them left behind upon the surface of the womb. Some parts of his description I am not sure that I fully understand, and it will now be generally admitted that he was mistaken in supposing that the umbilical arteries and veins terminate by “blunt extremities.” Mr. Dalrymple and Professor Goodsir point out the mistake into which he has fallen in this matter. He further speaks of having satisfied himself, “but not without considerable difficulty, of the existence of the utero-placental vessels described by the Hunters.” Now I am at a loss to comprehend how so excellent an anatomist as Dr. Reid could have experienced any difficulty in satisfying himself whether or not “vessels of the size of a crow-quill” pass from the uterus into the placenta, as represented by the Hunters. From some parts of his description one would be led to suppose that he considers the placenta to be formed altogether from foetal vessels, but in other parts he seems to suppose the existence of maternal vessels in it. The functional office and structure of the placenta he clearly

holds to be analogous to that of the branchia or gills of certain aquatic animals. He says, the placenta is therefore not analogous in its structure to the lungs, but to the branchial apparatus of certain aquatic animals.”* According to this hypothesis, then, the fœtus in utero is in a state analogous to the tadpole or young frog. It must be obvious then, that, if the structure and functional office of the placenta be as Dr. Reid represents, it is not formed in the human subject upon the type of structure which prevails generally throughout the class of mammals. No person, for example, who examines the foetal apparatus in the cow, the ewe, or the sow, would say that in them it bears the least analogy to branchia or gills. And besides it is clearly an organ of nutrition, and not of respiration, which the fœtus stands in need of.

The description of the placenta given by Dr. Knox† is held to be confirmatory of Weber's views, but I must say that to me it is by no means so clear as that given by his original. On one important point, however, he is decided—namely, that there are no cells or cavities in the placenta, and consequently he rejects *in toto* the Hunterian theory, which is utterly untenable, provided it be shown that the supposed cells have no existence. He speaks of the decidua being interposed between the placenta and uterus, but admits “that it is obscure in its real nature.” He further speaks of the placental vessels penetrating through this decidua until they reached the surface of the uterus, where they floated in one of the venous sinuses of the uterus. This would appear to me to be much at variance with Weber's views as stated above. Altogether, however, I must use the liberty of saying that I desiderate clearness of ideas in Dr. K.'s exposition of his views.

The elaborate description of the placenta lately given by Professor Goodsir, of Edinburgh, must be regarded as the one which at present gives the tone to professional opinion in this country, and therefore it now demands our serious attention. I must express my regret, however, at

* Edinburgh Med. and Surg. Journal, 1841, p. 1—12.

† MEDICAL GAZETTE, Oct. 30th, 1840, p. 200.

the outset, that my prescribed limits preclude me from giving so full an exposition of it as would be necessary to render the views therein advanced intelligible to any one who is wholly unacquainted with them. But as the work is now widely circulated, it is to be presumed that few readers of this communication can be entire strangers to it. The shortest way, then, by which I can convey to the reader a general idea of the author's views, will be by copying two of his plans, with the corresponding explanations. I shall only remark beforehand that these figures may be conceived as representing "a tuft" or a single point of the placenta where it comes into immediate contact with the uterus. *Ex uno disce omnes.*

The Structure of the Placenta.

FIG. 19.

FIG. 20

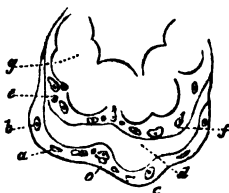


FIG. 19.—The extremity of a placenta villus. *a* The external membrane of the villus, the lining membrane of the vascular system of the mother. *b* The external cells of the villus, cells of the central portion of the placental decidua. *c c* Germinal centres of the external cells. *d* The space between the maternal and foetal portions of the villus. *e* The internal membrane of the villus, the external membrane of the chorion. *f* The internal cells of the villus, the cells of the chorion. *g* The loop of umbilical vessels.

FIG. 20.—This drawing illustrates the same structures as the last, and has been introduced to show the large space which occasionally intervenes between the internal membrane and the external cells. It would appear that into this space the matter separated from the maternal blood by the external cells of the villus is cast before being absorbed through the internal membrane by the internal cells. This space, therefore, is the cavity of a secreting follicle, the external cells being the secreting epithelia, and the maternal blood-vessel system the capillaries of supply. This maternal portion of the villus and its cavity correspond to the glandular ootyledons of the ruminants, and the matter thrown into the cavity, to the milky secretion of these organs.

It will here be perceived at a glance that the foetal parts are represented as being inclosed within the internal membrane of the villus, and that this membrane is held to be the external membrane of the chorion. On this most important point, then, in the anatomy of the placenta, Mr. Goodsir is completely in accordance with De Graaf, Malpighi, Munro, Boerhaave, Velpeau, and Dalrymple. It will also be seen that the foetal and maternal parts are represented as perfectly separate, and involved each in its own proper membrane, as further held by the physiologists of the 17th century; that, as also maintained by them, the foetus is held to be nourished by means of an alimentary fluid secreted by the maternal portion, and absorbed by the foetal; and, as likewise held by them, that the foetal parts correspond to the *placenta*, and the maternal to the *glandula* of the ruminants. And moreover it will be seen that, like these physiologists, Professor Goodsir compares the function of the placental villi to that of the villi of the intestines, and to the spongioles of plants. In so far, then, one might, at first sight, be disposed to think that Mr. Goodsir's object was to revive the theory of Harvey and De Graaf, and to show it to be in unison with his own favourite cell theory. But, on looking more narrowly into his "Essay on the Construction of the Placenta," one meets with opinions which it is difficult to reconcile with what I have stated to be the general bearing of it. It is impossible not to recognise in it a marked disposition to keep on terms with the followers of the Hunters. Accordingly he frequently speaks of the "maternal portion of the placenta," although it must be obvious that if, as he himself holds, this maternal portion be analogous to the *glandula* of the ruminants, it is no portion of the placenta at all. Another of his conclusions, wherein the same *animus* is manifest, is this: "The placenta, therefore, not only performs, as has been always admitted, the function of a lung, but also the function of an intestinal tube." Now Mr. Goodsir, upon reflection, must be aware that it has by no means been always admitted that the placenta performs the function of a lung—nay, more, there is nothing in his own paper to show that there is

the least analogy between a placenta and a lung, for he himself makes out an exclusive case in favour of its analogy to an intestine. His drift, however, would appear to have been, to reconcile in so far the conflicting theories of Harvey and Hunter. To the same prejudices in favour of the Hunterian doctrines may be ascribed his comparison of "the uterine cotyledons of the ruminant and other mammalia to a permanent decidua vera, and the milky juice interposed between them and the foetal cotyledons to a decidua reflexa in its primitive and simplest form." Now, the former of these comparisons is, no doubt, in so far appropriate; only I cannot see how the uterine cotyledons of the ruminants can be called *permanent*, since, as any person may see upon examining the carcase of a cow two or three months after calving, the *glandula* or *uterine cotyledons* disappear in the same manner that the decidua vera, or internal membrane of the uterus abnormally developed, does in women. And the milky juice of the ruminants is evidently analogous to the alimentary juice or liquor imbibed by the placenta, and not to the decidua reflexa, to which it can bear no analogy. I also find it a defect in Mr. Goodsir's description of the placenta, that he does not point out the place where, according to his views, the natural separation takes place between the maternal and foetal parts. It might be supposed that he represents it to be at the union of what he calls the internal and external membranes, since these two membranes are represented as being separated from one another by the alimentary fluid (more especially in fig. 20), and there is no vascular connection between them. The latter, at all events, is merely what is called in the nomenclature of the microscopists a basement membrane, that is to say, "a pellicle of such extreme delicacy that its thickness scarcely admits of being measured," (*Carpenter's Physiology*, 206.) Whether this very fine film is to be usually found on the uterine surface of a newly-expelled placenta, although I have made many attempts to satisfy myself as to the fact with the aid of a powerful microscope, I am neither competent to affirm nor deny, and, as Mr. Goodsir has not spoken out decidedly, I am at a loss to say

what his views expressly are on this point. At all events, it is evidently an insignificant affair, being, as he himself represents it, wholly devoid of all structure. That this is the outer membrane which envelopes the maternal parts must be conceded, I suppose, to so great an authority, although, I must confess, it appears to me hard to believe how such an immense sinus comes to be formed external to the lining membrane of the uterus. In the ruminants, with the foetal anatomy of which I am most familiar, the latter membrane—that is, the lining membrane of the uterus—is the envelope of the maternal parts or *glandula*, and all the sinuses are within it. One cannot help thinking that this would have been the most natural construction in the case of the human subject, but I readily admit that I am not competent to dispute this point with so eminent an authority, in microscopical anatomy, as Professor Goodsir, in whose opinions on all these matters I would place the most unbounded reliance, were it not that he evidently betrays throughout the whole of this paper a strong disposition to find all the phenomena connected with the placenta in accordance with the principles of the cell-theory. This bias has led him to adopt certain opinions regarding the placenta which I venture to predict he will find it necessary to modify at no very distant day. For example, he holds that "the nucleated cells" are the sole instruments of absorption, both in the intestinal villi, and in those of the placenta; thus refusing to admit to simple anabiosis, or *endosmose* and *exosmose*, any operation at all in this case. I perceive that Professor Matteucci has already pointed out this part of Mr. Goodsir's theory as being overstrained. (See *British and Foreign Medical Review*, No. 46, p. 378.)

Dr. Carpenter, in his "Manual of Physiology," professes to borrow a considerable part of his description of the placenta from Mr. Goodsir, but, upon the whole, he would seem to incline rather to the theory of Weber than of Harvey. Thus, treating of the nature of the foetal and maternal portions of the placenta, he says, that in the human subject "the two elements are mingled together through its whole substance;" and

he further speaks of the blood being "conveyed into the cavity of the placenta by the curling arteries," a description which I am not sure that I understand aright; indeed, I must freely confess that in the course of my numerous dissections of the placenta, I have never been able to detect either "the cells" of Hunter, or "the cavity" of Carpenter.

I am aware that I shall subject myself to the charge of presumption in certain quarters for thus venturing to criticise the opinions of two contemporaries so distinguished for their contributions to physiology as Professor Goodsir and Dr. Carpenter. But whoever undertakes the investigation of a subject like our present one, will find that at every stage of his progress he will have to encounter such discordant views and conflicting statements, advanced under the sanction of great names, as must soon compel him either to abandon the pursuit altogether in despair, or exercise his own judgment manfully in discriminating between truth and error. With much respect, therefore, for the two individuals I have named, and sensible how much physiology owes to the one as an original inquirer, and to the other as a diligent expounder of the discoveries of others, I must still be permitted to state, that I too feel conscious of having cultivated this department of physical science with so much diligence, that I am not afraid to claim for myself the privilege of exercising an independent judgment in every case: I must venture to say with Correggio, "*ed io anche sono pittore.*"

RETROSPECT.—Having thus finished my historical sketch of the opinions which have been entertained on the subject in question, I shall now briefly recapitulate the results, and state the conclusions which I hold may be legitimately drawn from the same.

I. It would appear that all the opinions which have ever been held regarding the construction and functional office of the placenta, may be referred to the following heads:—1st. Physiologists in ancient times, and down to the days of Harvey, holding that the male semen is the original of the embryo, believed that the uterine vessels penetrate into it, and thus directly furnish blood to the fœtus.

2nd. Harvey, and all the physiologists of the 17th century after him, held that there is no vascular connection between the mother and fœtus, and that in the human subject, as in all the other orders of mammals, the fœtus and its appendages are inclosed in a proper membrane of their own, through which they imbibe an alimentary juice, which constitutes the pabulum out of which the blood of the fœtus is formed. This theory accords in the main with the views entertained by *Monro primus*, in the middle of the 18th century, by Dutrochet and Velpeau, by Seiler, Dalrymple, and other authorities of the present day. 3rd. Certain physiologists in the 18th century, including the illustrious Haller, held that a mutual inosculcation of the fœtal and maternal vessels takes place upon the uterine surface of the placenta, and that in this way the uterine arteries supply pure blood to the placenta, while the uterine veins remove impure blood from it.

4th. The Hunters and their followers held that the placenta is formed partly from the ramifications of the uterine vessels, and partly from those of the umbilical, and that these two distinct portions are united together near its uterine side, and interchange blood by means of certain cavities named the placental cells.

5th. Weber, Baer, Wagner, and other advocates of the cell-theory in Germany, have lately propounded the doctrine that the whole mass of the placenta is composed of a double set of vessels, the maternal and umbilical; that these run along, side by side, through the whole structure of the placenta, the latter corresponding to the fibrous tissue of a sponge, and the former to the cavities or interstices of the same; that the maternal vessels are far larger than the fœtal, the latter being mere capillaries, whereas the former are represented to be "far too large to be spoken of as capillaries."

6th. We have shown above that all the views lately propounded by British physiologists, are modifications of the theories of Harvey, Hunter, and Weber.

II. It will be readily admitted that the first of these theories, being based on an erroneous assumption as to the original of the embryo, and also being formed in ignorance of the true functional office of the blood-vessels, must

be entirely rejected; and that the third is, if possible, still less deserving of any serious consideration, being founded on an erroneous hypothesis as to the termination of the absorbent vessels, and in ignorance of the difference which it is now well known there is between the globules of the maternal and fœtal blood.

III. With regard to the second, I hold that the following conclusions may be legitimately drawn from the facts and arguments stated in the preceding sketch. 1st. It is *a priori* highly probable, as assumed by the physiologists of the 17th century, that the human placenta should be formed upon the same type of structure that prevails through the other orders of the class *Mammalia*; and these physiologists have shewn, most satisfactorily, that in all the inferior orders, the maternal and fœtal parts connected with gestation are perfectly distinct, and that the fœtus is nourished by means of an alimentary liquor, secreted from the maternal blood, and imbibed by the fœtal secundines through their outer membrane, the chorion, which envelopes the whole secundines, including the placenta, when this organ exists. 2nd. The analogy between the apparatus for the support of the fœtus in the ruminants and the human subject is so striking, as to have been pointed out by physiologists in all ages. Now it is clearly shewn by the physiologists of the 17th century—and as to the fact I cannot entertain the slightest doubt—that in the cow the maternal and fœtal cotyledons, otherwise called the *glandula* and *placentula*, are perfectly distinct, and consequently there can be no vascular connection between the mother and the fœtus. The analogy of the ruminants, therefore, leads strongly to the probable conclusion that in the human subject the maternal and fœtal parts must be entirely separate. 3. The analogy of oviparous animals in like manner leads to the conclusion that it is an universal law in nature that animals in the embryonic state are completely separated from their parent. 4. The analogy of the placental tufts to the intestinal villi and the spongioles of trees is so striking as to have been particularly adverted to by physiologists in all ages, and it also leads to the same inference. 5. The appearances presented when separating

the placenta from the womb after death, as given by Malpighi, Monro, Dr. Lee in 1832, and others, are so striking, as to preclude the supposition of there being any vascular connection between the uterus and placenta. John Hunter's assertion that he detected "arteries of the size of crow-quills, and veins of a large size," passing between the mother and the placenta, has not been confirmed by the observations of any trustworthy inquirer since his time. 6. As is remarked by De Graaf, Dr. Lee, and others, if the placenta were connected to the uterus by blood-vessels of considerable size, it is impossible that the separation of the placenta could ever take place without hæmorrhage. 7. The last remark is still more striking in the case of inversion of the womb. 8. The appearances on the uterine surface of the placenta as described by Malpighi, Monro, Boerhaave, Dr. Lee in 1832, J. Dalrymple, and others, have been confirmed by repeated observations made by myself, and, as far as I can see, they entirely preclude the supposition of any vessels from the mother entering the placenta. The uterine surface is covered with a fold of the chorion, and no vestige of any blood-vessel can be detected on it even with the aid of a microscope. 9. As remarked by De Graaf, Velpeau, and others, if the placenta did not belong exclusively to the fœtal apparatus, this organ could not possibly be formed in extra-uterine pregnancies. 10. The figures of the ovum given by Velpeau in his *Embryologie*, put it beyond a doubt that the placenta is an appendage of the chorion, and that no maternal vessels enter into its structure.

IV. With regard to the Hunterian hypothesis, the following are the results of our preceding investigation, and the conclusions which I think must necessarily follow from them:—1. That the Hunters took up the consideration of this subject under very erroneous impressions in regard to the absorbent system, and looked upon the phenomena connected with the placenta under a strong bias in favour of their preconceived views. 2. That they allowed themselves to be imposed upon by fallacious appearances in certain injected preparations contained in their museums, as Professor Goodwin shews that in like manner they were

deceived by similar preparations illustrative of the mode by which the absorbents terminate in the intestinal canal. 3. That, according to Velpeau, many of the figures in W. Hunter's work on the Gravid Uterus are either drawn from the imagination, or exhibit appearances very different from the natural. 4. That, when J. Hunter described "vessels of the size of crow-quills" running between the uterus and the placenta, he most probably committed the mistake which Monro shews Noortwyk to have fallen into—namely, that of confounding the portion of the maternal apparatus which is analogous to the *glandula* of the ruminants with the placenta itself; the fact of the matter being, that this fungous substance in the human subject is entirely separate from the placenta as it is in the ruminants. 5. That, as we have shewn to have often happened to other inquirers of equal eminence, the Hunters most probably allowed themselves to be imposed upon by preconceived notions when they described the openings of arterial vessels said to be seen by them on the uterine surface of the placenta. 6. That it seems to be now pretty generally conceded that there is no such structure in the placenta as the cavities described by the Hunters under the name of placental cells. 7. That, according to the Hunterian hypothesis, the formation of the placenta in extra-uterine conceptions is utterly inconceivable. 8. That the human placenta, if constructed on the plan represented by the Hunters, would be a perfect anomaly in nature, as it cannot be shewn that the same organ is formed upon the same type in any other animal whatever. 9. That, in particular, the human placenta, as described by the Hunters, is analogous to the lungs in the adult, whereas in all other animals its corresponding part is analogous to the intestinal tube: in other words, the placenta is evidently an organ of nutrition, and not of respiration, as held by the Hunters.

V. Respecting Weber's hypothesis, I hold,—1st, That most of the objections stated above to the Hunterian theory of the placenta apply also to that of Weber, as far, at least, as concerns a vascular connexion between the uterus and placenta. 2. That no competent proof is offered of the

placenta being formed on the plan he describes. 3. That the German physiologists are utterly at variance as to the facts upon which this hypothesis is founded; thus, for example, Eschricht, of Copenhagen, agrees with Weber on many points, while on others he proclaims his dissent, whereas Seiler entirely denies all vascular connexion between the placenta and the uterus,—all this implying that the hypothesis has been hastily concocted from assumed facts of a very questionable stamp. 4. That this hypothesis is irreconcilable with a prominent fact than which there is no fact connected with the subject established upon a greater concurrence of high authority,—namely, that the uterine surface of the placenta is covered by a smooth and firm reflection of the chorion. 5. That if tried by the acknowledged tests of evidence, the conflicting statements of alleged facts in support of the hypotheses of Hunter and of Weber nullify one another. According to the one the utero-placental vessels are few in number, and of considerable size,—according to the other, they are numerous, and of small size; according to the one these vessels immediately after entering the placenta are lost in the cavities called the placental cells,—according to the other, the placental cells have no existence, and these vessels retain their vascular form throughout the whole structure of the placenta.

Finally.—Seeing, then, that there are so formidable objections to the last two hypotheses, it seems impossible not to recognise the first as being the only true theory of the structure and functional office of the placenta, inasmuch as we have seen that observation, analogy, and reasoning from the undoubted facts of the case, all lead us to the same conclusion,—namely, that the human placenta is formed upon the same type as its analogues in all the genera and orders of the class of mammals;—that it is a portion of the foetal appendages, having no connection with the maternal parts but by imbibition through its investing membrane, and that its functional office is analogous to absorption by the intestinal tube, and bears no analogy whatever to the process of respiration in adult animals.

MEDICAL GAZETTE.

FRIDAY, SEPT. 3, 1847.

In resuming our examination of Captain Williams's Report, in so far as it relates to the charges against the medical officer of the hulks at Woolwich, we propose to consider *seriatim* the various cases of savage cruelty and barbarous neglect which Mr. Duncombe described as "utterly disgraceful to a civilized and Christian country."

Mr. Duncombe's Charge.

1. "George Monk, or Taylor, belonging to the 'Warrior,' a lunatic; he was admitted on board with a broken leg; he was allowed to lie in bed in his own water and filth until such time as a large piece fell out, putrid with his urine, from the bottom of his back-bone; he was sometimes handcuffed to each side of the iron bed which he lay on, at other times with a strait jacket on; he, if he were living, bore the mark on his back. This man was afterwards removed to Bethlehem."

Captain Williams's Report.

1. "Case of George Monk.—The evidence on this case does not in any way support the charge of neglect or cruelty. George Monk was a lunatic, and was in the hospital in consequence of having broken his leg by accident. His violence and restlessness under treatment were so great that he on one occasion displaced the fractured bone, and the surgeon was obliged to place him under restraint; handcuffs and other means being resorted to, to secure him from impeding his own cure. He was for a time unable to attend to his personal wants, and appears to have had a bed-sore on the back; but there is no evidence to prove this arose from neglect. The witness, George Rushworth, page 72, question 2625, who was over him as nurse for three months, and gives a somewhat exaggerated description of the case, says, 'I took to him, and every time he dirtied himself I used to clean him

and get him a clean bed.' The convict recovered from the effects of the accident, and was sent to Bethlehem, where he undoubtedly ought to have been removed before the accident occurred."

We predicted in February last* almost *in terminis* what would be the result of an inquiry into this case, and then said, "Let those surgeons who have henceforth to deal with intractable bed-sores in lunatic patients, where the case may be complicated with incontinence of urine, or great difficulty in enforcing cleanliness,—tremble for the result!"

Mr. Duncombe's Charge.

2. "An old man of the name of Peter Bailey. When Mr. Perry called, he told Mr. Bossey that the poor man ought to be sent home, and they passed on to other prisoners. This poor man got daily worse; he asked Mr. Bossey if he could see a religious person belonging to his own persuasion. He asked him what that was. He told him he belonged to the Wesleyan Methodists, and Mr. Bossey said, laying great stress on his words, 'What brought you here?' He then began to relate a life of the most simple nature, at which Bossey began to laugh. 'Sir,' said he, 'you have more occasion to pity me than to laugh at me.' Bossey turned round to him and said to him, 'It is of no use your imagining that you will ever go home, for home you will never see; you will die on that bed you are lying on; for, were your friends at the gates of the Arsenal, they might come to see you; that would be all the consolation you should derive.' He died a few days afterwards. I called to see him the Friday before he died; he told me that he had a pain at his heart ever since Mr. Bossey's conversation with him, and said, 'He has broke my heart.'"

Captain Williams's Report.

2. "Case of Peter Bailey.—Much evidence has been adduced on this allegation, but I come to the conclusion that Peter Bailey was treated with kindness, and received every attention

from Mr. Bossey. The circumstances which gave rise to this case are to be regretted, but they were accidental, and peculiarly liable to misconstruction. Mr. Perry, the Inspector of Prisons, on an occasion of his visiting the hospital ship, the 'Unité,' observed the declining appearance of Peter Bailey, and, in his hearing, said to Mr. Bossey, '*This poor man ought to be sent home.*' These words appear to have made a very strong impression upon this man's mind, no doubt more than ordinarily susceptible and irritable from disease; and, on his finding that no result followed this observation of Mr. Perry, he seems to have taken it greatly to heart, and to have made it the frequent subject of conversation with his fellow-prisoners, attributing his not receiving a pardon to Mr. Bossey, saying that he had broken his heart. The surgeon, in not recommending Peter Bailey for discharge, appears to have acted in this case upon the same general principle which governed him in others, that it was not the custom of the establishment to apply for the liberation of aged, infirm, or sick prisoners, until they had served one half of their terms of transportation. With respect to the charge of Mr. Bossey having intended to mock, or of his having used derisive language to his prisoner, I consider it quite groundless. The surgeon, well aware that the convict's hopes of liberty were not likely to be realised, appears to have endeavoured to convince him of their futility, and to reconcile him to his situation, and, being of the same religious persuasion, a Wesleyan Methodist, he interested himself more than ordinarily, by procuring for him the attendance of a minister of that sect."

Mr. Duncombe's Charge.

3. "The next man that came under my notice was William Theobald, belonging to the 'Justitia.' This man was subject to epileptic fits, besides great weakness of body. Mr. Bossey called one day when he was in a fit, and said, 'He should soon cure him.' He ordered a bucket of water to be brought to him; he got upon his bed, he ordered a tin to be given him, and he commenced pouring the water on his head, which had no effect. The next day he saw him, and told him he should have him well flogged if he

found him in any such fits as those again. He died on the 31st of July, 1844. The diet that he was receiving at the time of his death was three pints of skim milk, and three-quarters of a pound of bread."

Captain Williams's Report.

3. "*Case of William Theobald.*—The evidence given in this case appears to me to establish that the medical treatment of William Theobald by the surgeon was judicious and proper, and the allegation of his threatening to have the prisoner flogged if he saw him in such fits again, is unsupported, and appears, under the circumstances, improbable.

Mr. Duncombe's Charge.

4. "The next was James Brandish, a maniac. This man was admitted while in a fit, roaring out very lustily. This was his second time of admission into the hospital. When I saw him, he was shouting out on each occasion. The first time when Mr. Bossey saw him he began to laugh at him, and told him 'Those fits would not do there.' Brandish had a fit after this, which appeared to deprive him of the power of opening his jaws. Bossey placed his thumb on his cheek and pressed against his teeth; he then opened his mouth. Bossey began to laugh, and said, 'It's all gammon, Mr. Brandish. I will have you well flogged if you don't alter your course of conduct. I will have you sent to the Justitia, and well flogged.' After the doctor went away I examined his mouth, and I found that his cheek was cut opposite where he pressed it with his thumb. They frequently handcuffed his hands to each side of the bed, and kept him lying in this position in his dirt and water until a large piece mortified out of the bottom part of his back, about the same place as that of George Monk. He became completely childish. The doctor frequently threatened to have him flogged. He allowed him wine before he died, a part of which he took off a few days before his death, with his usual threat of having him flogged. He died October 6, 1844."

Captain Williams's Report.

4. "*Case of James Brandish.*—This case has occupied a considerable por-

tion of time and attention, and from the period which has elapsed, it being nearly three years since the man died, and the contradictory character of the testimony, it is somewhat difficult to arrive at a just conclusion.

"James Brandish was admitted into hospital with epileptic fits, first in April, 1844, and several times subsequently until his death, which happened in the October of the same year. He appears, on his first reception at the hulks from Millbank, to have been of weak intellect, bordering upon insanity; which gradually increased with the frequency of his fits. Mr. Bossey seems to have doubted whether the indications of insanity were not assumed. Whether in forming such an opinion he acted with discrimination and judgment, is a question which could only be answered by a professional view of the case at the time. The patient, however, continued, with the exception of short intervals, to sink under the influence of his attacks, becoming gradually more imbecile and helpless, and was at last reduced to a state of insensibility, being wholly dependent upon the attention of the nurses and officers for the commonest offices. During his paroxysms it seems that his mouth was frequently closed, and that it became necessary to employ means to open it, and I cannot find that the surgeon in so doing used the slightest unnecessary violence, but, on the contrary, rather evinced professional dexterity. With respect to the allegation of James Brandish having been neglected, it is established that Mr. Bossey, when visiting the patient on one occasion, found him in a very neglected condition as to personal cleanliness; and Mr. Blyth, the assistant-surgeon, in his examination relative to Brandish's case, is asked the following questions:—

"3854. Have you any recollection of there being any disputes between Mr. Phillips and Mr. Bossey upon the subject of this man?—I have a recollection of Mr. Bossey being very angry with everybody about him, but his anger was specially directed to the master of the hospital.

"3855. As to his neglecting Brandish?—Yes; but that he had been neglected for a week I can safely say is impossible. I believe so.

"3856. You do not know?—No, I do not know.

"3857. You perfectly recollect the circumstance of Mr. Bossey being very angry with Mr. Phillips and the master of the vessel for neglecting this prisoner?—Yes, I do."

"The fact of James Brandish having been neglected when in the hospital admits of no doubt; and that the neglect was not of a trifling nature may also be assumed from the evidence of the convicts, making allowance for some exaggeration, and the degree of anger it seems to have elicited at the time from Mr. Bossey. The responsibility for the proper treatment of all the patients in the hospital devolving upon the principal medical officer, he is no doubt answerable for this neglect."

Mr. Duncombe's Charge.

5. "The next was William Cooper; he was nurse in the hospital. I will here state how the office of nurse is fulfilled. On a man being admitted to the hospital, he is put on what is termed low diet, which consists of eight ounces of bread, two pints of tea, and one pint of mutton soup. This is his diet for the day. The medicine which is prescribed for all diseases when they enter is a purging draught and a calomel pill. The patient is then confined to his bed for three or four days perhaps, when Bossey pronounces him to be recovering. He then orders him to get up, and make himself useful as a nurse in waiting on the other patients, and keeping watch at night. Those watches sit up all night, three of them taking it in turns, and dividing the watch into two hours and a half each. At this time the poor man perhaps is not able to walk, which I have frequently seen the case, the nurse often worse than the patient whom he is attending. This Cooper was one of these nurses. When he arrived at the hulks he was bad with a liver complaint, which was swollen to an enormous size. It projected two inches. I heard Bossey tell some young men, who, I believe, were his and his brother's apprentices, that there was a bag of matter lying in the pit of his stomach, and he then ordered him to lie down on a bed, and to strip his breast; when he commenced knocking and squeezing

it, his sides and breast, but in particular that part where he said the bag of matter was. The next day this poor man was unable to get up. He complained bitterly to me of the treatment that Bossey gave him in bruising and pinching him in the way that he did, and he ever after complained of the pain that he endured from that pinching. He said he believed that Bossey wanted to break that bag of matter which he had described to his apprentices. He died shortly after."

Captain Williams's Report.

5. "*Case of William Cooper.*—No evidence has been adduced in support of this allegation; Mr. Duncombe having stated that his informant had been discharged from the hulks, and his attendance not procurable. The statement of the surgeon, p. 369, which appears reasonable, must be admitted as a *full and exculpatory explanation* of the circumstances of the case."

This case, upon which Mr. Duncombe was unable to adduce any evidence in support of the charge of manslaughter which it involves, is of some interest to those professional attendants of hospitals, and persons who are foolish enough to aid their diagnosis of disease by percussion or palpation. In the House of Commons, where medical men are not admitted, this mode of examination will easily pass for knocking and squeezing, pinching and bruising, &c.,—the surgeon, of course, selecting for these operations the "bags of matter," and other parts of the body, where the patient happens to be most sensitive! The result of this case, therefore, is, that Mr. Duncombe is unable to prove one iota of his allegation, and Mr. Bossey, in his evidence, declares emphatically that the whole charge is false.* The statement implies, *prima facie*, gross ignorance, and a malicious desire to exaggerate facts, on the part of the pretended witness of these alleged barbarous proceedings.

* Report, p. 270.

Mr. Duncombe's Charge.

6. "*Henry Heighton.*—Treated for six months for consumption, and kept from the hospital to the last moment. When on his death-bed, he was ordered out to work, which he declared he was unable to do. Mr. Bossey threatened him with punishment. He got up, and in a few hours death eased him of his troubles. In his last moments he declared he was a 'murdered man.' He entered the hospital on the 25th of May, and died the 9th of June, 1846—15 days."

Captain Williams's Report.

6. "*Case of Henry Heighton.*—The case of Henry Heighton has been satisfactorily traced from its commencement on the 12th of March, 1846, when he was admitted into hospital as a case of fever, discharged on the 22d of April, re-admitted May 25th, to its final termination in his decease on the 9th June in the same year."

The statement that Henry Heighton was treated for six months for consumption is *incorrect*, nor has the allegation that he was kept from the hospital to the last moment, *been supported, by evidence*. The assertion, that when on his death-bed he was ordered out to work, which he was unable to do, is *unfounded*, as also of the surgeon threatening him with punishment, or his getting up and declaring in his last moments he was a murdered man. The charge of his being ordered out to work, appears to have arisen from the improper practice of employing patients in the hospital as watches and nurses over the sick. Robert Ellis, a convict, states, that the clerk or the doctor's mate, both convicts, ordered Heighton out of bed as a watch, when he was unable to perform his duty. It does not, however, appear, even if this was the case, that he attempted the duty, and it is quite clear he was *neither punished nor threatened with punishment for his non-compliance*. *This man's case appears to have received every attention from the hands of the medical officers.*

Mr. Duncombe's Charge.

7. "*Henry Driver* (Milbank prisoner.)—Died through similar treatment; said to be a schemer by Bossey. Entered the hospital the 21st of May,

died the 26th of May, 1846—four days. This unhappy wretch had no sooner departed this life, than the body, still warm, was carried over to the dead-house, and the knife at work, operating and dissecting. Entrails taken from the body, and thrown into the river, where dozens had gone before. When the dissection was over, the vacuum was filled up with flannel, and then sewn up for the jury to sit on."

Captain Williams's Report.

7. "Case of Henry Driver. — The allegation that the post-mortem examination of Henry Driver took place the day he died, is disproved by direct evidence of its having been performed in the morning of the day succeeding his decease. The statement that his entrails were taken from the body and thrown into the river, where dozens had gone before, is greatly exaggerated, and the surgeon's explanation may be received as nearer the truth.

From this we learn, that the "entrails" referred to by Mr. W. M. Brown, Mr. Duncombe's convict-witness, consisted of the washings of blood, and some portions of fibrinous effusion, removed during the inspection (1252 5.) It appears that in this case there were extensive layers of lymph. Our readers will perceive that this is no more than would have been thrown away at the inspection of a private patient. The case strongly proves the impropriety of allowing convicts to be present at a post-mortem examination: if evil-disposed, a fine *ad captandum* case may, as in this instance, be got up for the House of Commons! Captain Williams's report proves that Brown's statement is false from beginning to end. (p. xi.)

We pass over the two remaining charges, as they refer to cases of improper punishment, for the infliction of which Mr. Bossey is not responsible.

The charges being thus proved to be unfounded, by the report of a gentleman, who received from Mr. Duncombe, during the enquiry, "the

greatest courtesy and deference," the only inference which it appears to us can be fairly drawn is, that a gross libel has been extensively circulated to the prejudice of Mr. Bossey's character as medical officer, and that the law affords him no redress, and the Government, as it appears, no protection.

Let us put the case that Mr. Duncombe had published these statements respecting Mr. Bossey in a daily newspaper, upon his own responsibility, and unprotected by his parliamentary privilege. Mr. Bossey would then have been able to meet him fairly in an arena where justice would be done, i. e. in a Court of Law. The want of power to produce evidence in support of an allegation of manslaughter, and the misapprehension of decimals and statistical facts, would, we believe, avail nothing before the Court of Queen's Bench. The judge would tell the jury that a man's character was not to be damaged, and his professional prospects were not to be ruined, because the defendant chose to rely upon the hear-say statements of convicted felons; and we have no doubt that the verdict of a jury would show, by heavy damages, that greater caution should be used before such injurious imputations were cast upon professional men!

There is no probability, however, that the matter will be thus settled,—still it may be as well to look to some parts of the evidence of Mr. Duncombe's principal witness—*W. Mawman Brown*. There is an old legal adage, "*in re lupanari testes lupanares*:" and the quotation, which we are about to give from his evidence, will, we think, show that it is justly applicable to this witness. *Mr. Brown*, the inventor of the atrocities regarding which we have already quoted Captain Williams's report, was

convicted of forgery in 1843, and sentenced for twelve years. It appears, that this man was in the habit of secretly taking notes, in pencil, of the treatment and medicines prescribed, from the hospital-book, and of communicating these, with his own comments, to honourable men. He informs us that "he had marked the dates, and honourable men would take his word." (question 41.) Mr. R. Capper states in his evidence that "Brown acknowledges that Dr. Bossey treated him kindly, and that he had been deceived by other prisoners. He said that Dr. Bossey had accused a prisoner, of the name of Driver, of scheming (see case 7); that the man was taken into the hospital, and died five or six days afterwards; that while in the hospital himself, he never saw any harsh treatment, and never heard a fellow-prisoner complain of Dr. Bossey." (question 54.) We will now compare this with Brown's own statement to Captain Williams. [The italics are our own.]

"320. Make your statement. For some considerable time, for some months, I should say, since last May, I have noticed Mr. Bossey's ill-treatment to the general body of the prisoners, and I made notes and memorandums. Those notes and memorandums are to be had, but they are not in the ship.

321. Ill treatment of the convicts? General neglect and ill-treatment to the convicts.

322. Where are your notes? I have sent them away.

323. To whom? To a party outside.

324. What is his name? I could not tell you till I saw the prisoner; he had them in the ironing-house: when we found there was a search going to be made for all the memorandum-books. I sent them out.

325. What is the prisoner's name? Butler, one of the washing-men, George Butler.

326. He has the notes now? I told him to send them away, but I have not seen him since.

327. You have given information to Mr. Duncombe relative to the case of Henry Heighton (Case 6), a prisoner, who died in the hospital on the 9th of June, 1846, have you not? Yes.

328. Are you yourself cognizant of the truth of those statements or not, or do you derive them from other prisoners? I have taken them from that book (*pointing to a book on the table*).

329. Are the facts which you have stated to Mr. Duncombe relative to the treatment of Heighton, facts which you have ascertained yourself, or from any other prisoner? The statement I have given relative to Henry Heighton, with reference to what occurred while he was at this ship, comes from my own personal knowledge; what transpired at the hospital, is from what was reported to me.

334. Relate what took place in this ship with respect to Henry Heighton. That as far back as January he was ailing then, and that Mr. Bossey attended to him, and sent him once or twice to the hospital; he was there a short time, and he came back worse than when he went.

331. Had you any conversation with him? Yes.

332. What did he state to you. He told me always he was a dying man; he never said he was a murdered man; he said he knew the doctor would be the death of him."

We shall next pass to the evidence of this worthy witness respecting Mr. Bossey's alleged non-attendance on the convict-patients.

"370. Is there any other case you wish to give evidence upon? I do not know anything of Davis's treatment; he was taken suddenly ill; he was not in the list at all; he died suddenly. There are many cases that are not down there at all. I gave you the names of those that can state them to you. I have mentioned that Doctor Bossey was in the habit of *stopping away for some days*. It was several days in December: *six days running*.

371. Who were they attended by then? By no one; there was no one at the hospital.

372. (*Mr. Duncombe*.) Not Mr. Blyth? Mr. Blyth was in town.

373. (*Captain Williams*.) How do

you know that he did not attend? *Because I took notes, and made memorandums from the Medical Officer's Rough Entry Book.*

374. *Did you affix a mark to this book every day that Mr. Bossey did not attend?* Yes.

475. Give the dates on which you say Mr. Bossey did not attend the 'Justitia.' November 24th, 25th, 26th, 27th, 28th, and 30th; December 1st, 4th, 6th, 7th, 14th, 20th, and 24th; January 15th and 19th. I have every reason to believe that the first six days he did not attend here, and he did not attend at the hospital. It was remarked that the men might die, or be taken ill in the middle of the day, and no doctor to attend to them."

We may now compare this statement with the evidence of other witnesses.

Mr. Jones, Mr. Bossey's assistant, is asked—

"4591. Have they (the convicts) ever been left without a properly qualified medical person to attend them? No; whenever I have been left on board Mr. Bossey has always visited them.

4593. Do you recollect any occasion of Mr. Bossey not visiting the ship? There was *one day*, when he was very ill.

4594. In November last do you remember more than one day? No, only one day, and then Mr. Blyth was on board. Mr. Bossey was very ill.

4595. Can you positively state that Mr. Bossey attended the 27th, 28th, 29th, and 30th of November last at the hospital? I can positively state that there was only one day he omitted in November. I cannot state the day, but only one day that he omitted to attend, and then I took him up the state of the prisoners from Mr. Blyth."

Mr. Blyth, who occupies, independently of Mr. Bossey, the post of Assistant-Surgeon, says, when cross-examined by that gentleman,

"5599. Have you ever known me in the habit of stopping away three days from this vessel? Consecutive days?

5600. Yes. No, never since I joined here.

5601. (*Captain Williams.*) Do you mean the 'Justitia,' or the hospital?

(*Mr. Bossey.*) From either. (*To the witness.*) Do you remember my absence on the 24th of November last year? You were absent two days in November, from illness, I think.

5602. Have you any recollection that I visited the hospital in the month of November last year, about the 25th, 26th, 27th, and 28th, in a state of great weakness from illness? Yes, perfectly. I remember on one occasion your going down the ladder at the 'Wye,' and you would have fallen from weakness if Mr. Strickland had not caught you in his arm.

5603. At that time? Some time in that month.

5604. Do you remember whether I was present or absent from the 'Justitia' on the 19th of January, 1847? I do not recollect; the books will show.

5605. Will you refer to the book. (*The witness referred to the book.*) Turn to December the 7th, 1846. Do you find any entry on that day in my handwriting? Yes, here is one.

5606. What is it? There are two; there is one.

5607. *The prescription for whom? The name is Mawman Brown: two leeches to the tongue, and tonic mixture twice a-day.*"

On comparing these statements, it will be perceived, that Mr. Duncombe's witness, who was so correct in taking his memorandums from the entry-book, was himself actually seen and prescribed for on one of the days, December 7th, 1846, on which he declared the medical officer did not attend! This fact, however, does not rest upon the testimony of witnesses, who, as belonging to the medical staff, might be supposed to be favourable to Mr. Bossey. Here is the evidence of the Chief Officer of the Hospital Ship, Mr. Strickland:—

"It has been stated that Mr. Bossey did not attend on certain days. Just look at December 1st, 1846; did Mr. Bossey attend that day?—I will refer to it. (*The Witness referred to the Occurrence Book*) Mr. Bossey attended, also the assistant-surgeon.

"Did he attend on the 4th?—Mr. Bossey attended, also the assistant-surgeon.

"On the 6th?—The surgeon, Mr. Bossey, attended, also the assistant-surgeon.

"The 7th?—Mr. Bossey attended, and also the assistant-surgeon.

"The 14th?—Mr. Bossey attended, also the assistant-surgeon.

"Are you prepared to declare the truth of those entries?—Yes.

"To verify them?—Yes; to verify them on oath.

"Upon oath?—Yes."

It is clear, from this evidence, that on *five* out of the "six days running" during which this witness deposed that Mr. Bossey was absent from his duties, he was actually present and performing them! There was not only the Occurrence-book to prove this, but, if necessary, the oath of the Chief Officer, Mr. Strickland. We cannot, by any stretch of charity, refer this false statement on the part of Brown to a mistake, — his feeling against "Bossey," as indicated by the result of the inquiry into his special cases of cruelty, &c. is too apparent. Besides he plainly declares that he "took notes and made memorandums,"—"he affixed a mark to the book *every day* Mr. Bossey did *not* attend!" and as a conclusive fact in support of the truth of his statement he says in his evidence:—"It was remarked that the men might die or be taken ill in the middle of the day, and no doctor to attend to them." What can be more circumstantial than this?—How can falsehood more strongly assume the guise of truth? and what other inference can be drawn from the facts, than that Brown has shown himself as expert in the invention of malicious falsehoods to injure a medical officer, as he probably was in his old vocation of forgery! If these statements had been made on oath, it is clear that this man might have been indicted for perjury: yet we find him thus boasting of his qualifications as a witness in answer to Quest. 401, put

by Mr. Duncombe. "I told him (Mr. Capper) I had been twice up to London as a witness in the highest Courts;—in the Court of Queen's Bench, and Court of Common Pleas,—and that by *my evidence alone* verdicts had been obtained for the parties." If there be any truth in this statement, it is perhaps just as well for the parties who gained the verdicts, that their names were not revealed: but we think that had the witness given such testimony as he gave in this case, it would have been beyond the power of any member of the House of Commons to have rescued him from a conviction for perjury.

We might proceed to point out other parts of the evidence which show that no reliance whatever can be placed on this witness, but it is surely unnecessary. It is, we think, clear that Mr. Bossey, in so far as these charges are concerned, is quite exonerated by Captain Williams' Report. Thus we find it explicitly stated by this gentleman, in his summary of the medical treatment of the convicts:—

"Independently of the allegations made by Mr. Duncombe, which imputed cruelty to Mr. Bossey in his medical treatment of the convicts, other cases of a similar tendency were brought before me and investigated; but in no instance do I consider that either cruelty or harshness, in his medical treatment of the convicts, have been proved against him. His general conduct appears to have been kind, although in some instances, from anxiety to escape imposition, he may have imposed upon himself, in suspecting imposture where real disease existed, but the numerous simulations of disease to which medical men in charge of penal hospital establishments are subjected, may well palliate solitary instances of errors in judgment, to which men in every condition of life are liable."

For the defects in the present system of managing the Hulks, Mr. Bossey is not fairly responsible, nor is it our

duty to enter upon this part of the case. A medical officer has been publicly attacked, most unjustly as it appears to us, in his medical capacity. The honourable gentleman who became his accuser said, "if the inquiry failed to substantiate his statements, the disgrace must rest with him." He told his incredulous hearers in the House of Commons, that he had "understated the case,"—that in fact he had "only half-stated the cruelty" with which convicts were treated,—that "he was prepared to prove *all* he had stated," with respect to them, &c. We have here brought the facts before our readers; and we will now leave them to judge, whether Sir Walter James, in saying "that the hon. member for Finsbury was occasionally in the habit of making *ad captandum* statements, which, upon investigation, did not turn out to be so well-founded as they ought to be,"—was overstating the case in favour of the medical officer who has been made the subject of these most unjust and calumnious charges! The whole of the proceedings throw a curious light upon the very unsafe position in which all medical men, holding public appointments, are placed.

Rebifos.

Observations on Lateral Curvature of the Spine, pointing out the advantages to be gained by placing the body in a position to produce Lateral Flexion of the Vertebral Column, combined with the after-application of firm mechanical support. With Woodcuts. By EDWARD F. LONSDALE, F.R.C.S., &c. &c. 8vo. pp. 116. Churchill: London, 1847.

THE plans of mechanical treatment hitherto adopted in cases of lateral curvature of the spine have principally consisted of the application of supports intended to relieve the spine of the weight of the head and shoulders, and the use of couches and other contriv-

ances which produce extension of the spine in its vertical axis. Mr. Lonsdale, however, considers that the principle of extension is not the best to act upon for the purpose of bringing the spine from the curved into the straight position; neither does he think it the most scientific, for the force tells mechanically with the least advantage, and requires that most powerful means be exerted to produce the desired effect. He observes:—

"All curves, no matter of what nature the body in which they exist, are more easily rectified by applying the force in an opposite direction, by *unbending* them rather than by pulling upon them at their two extremities; in the former the advantage of a lever power is gained, in the latter, an extending force only can be employed, at the same time that it tells in the least favourable direction. This principle is equally applicable to curvature of the spine, where the vertebral column has been *bent*, or thrown out of its natural erect line, by mechanical causes only. The spine, though composed of many small bones, is similarly circumstanced to a single long bone, that may yield or become curved from its structure being too weak to resist any mechanical weight it may have to support, or that may be made to tell against it. The effect produced is the same in both cases, though the causes are not precisely similar. Taking this view of the subject, it appears to me that the treatment of a curvature of the spine, depending on simple weakness unaccompanied with disease of the bones or ligaments, should be conducted on the same principles as when the curvature exists in a single bone only. Bearing this principle in mind, I considered that the position by which lateral flexion of the whole vertebral column could be produced, by *bending* the spine in the opposite direction to that in which the curvature had thrown it, would be the one most likely to overcome the resistance of the ligaments, and to bring the displaced bones into their natural position."

—(Preface, pp. 1-2.)

After giving a concise but scientific and interesting account of the causes and symptoms of lateral curvature of the spine, Mr. Lonsdale proceeds to argue at greater length upon the principle of treatment suggested in the above passage, and to describe the manner in which he is in the habit of employing it. He remarks:—

"If we desired to straighten a bent stick or rod of iron, should we stretch it by pulling upon the two ends in its long axis? Should we rather not attempt to *unbend* it,

by placing the most curved part on some body to form a fulcrum, and then act upon the two extremities by applying a lever force in a direction opposite to the curve? Would not a bent stick be most easily straightened by placing the curved central portion on the knee, and then drawing or pulling on its two ends? The same may be done with the spine, at least it appeared to me that such might be effected when I first began to pay attention to the subject, and I have been fully borne out by the practice I have adopted." With this view Mr. Lonsdale recommends that "the patient should be placed on the side on which the projection formed by the curve exists, instead of on the back, and allow the legs, the head, and upper extremities to fall to a lower level than the trunk; by this means a sufficient power is at once gained by the simple weight that is then exerted at either side of the trunk, to gradually act upon the spine and to regulate itself; imitating, in fact, the straightening of a bent rod or stick: no other mechanical means are required; the weight of the legs at the one extremity, and of the head and shoulders at the other, exert a force quite sufficient to reduce any slight curvature that may exist, and as much as can be borne, or it may be judicious to apply in severe cases."

Mr. Lonsdale employs a couch which is so arranged that the level of the legs, or of the head and shoulders, can be altered at pleasure by letting either the upper or lower part of the horizontal framework upon which the patient lies, or both, fall as much as may be required, and fixing them by a screw, while the central portion of the framework, which is opposite to the thorax when the patient is placed upon it, is fixed and connected to the sides of the couch.

"When the patient is placed upon the couch, the body is supported by a sling made of a broad belt, six or eight inches wide, attached by a strong strap and buckle on either side to a perpendicular framework or yoke thrown across the couch, and fitting into it nearer to the upper than the lower end, that it may be opposite to the thorax when the patient is placed within it. This belt admits of being raised or lowered, and can be made to act upon the curve of the spine by the straps or buckles with which it is attached to the perpendicular framework just described."

The patient is to be placed in the belt, being made to lie on her right side, which is nearly always the projecting one, caused by the curvature of the spine forming the arch in that

direction. The belt should be so placed that the pressure may tell on the most convex portion of the thorax, the body being slightly turned on the back, so as to support the angle of the ribs more than the centre, (when the ribs project at this point.) The flap of the couch on which the legs rest is lowered to a sufficient extent to make a slight strain upon the spine, and the upper flap is lowered in a similar manner, but not to so great an extent. The patient's own feelings must be consulted as to the extent to which the couch is to be lowered. The belt is required to be raised only to an extent sufficient to swing the body, and to prevent the thorax from pressing against the couch itself. The author recommends the above position of the patient as an *adjunct* only,—he does not, as a rule, require the patient to remain on the couch for more than an hour, that being quite sufficient if followed up with perseverance every day. After the patient has remained in this position for an hour or an hour and a half, (or longer if it can be borne), immediately on her rising from the couch, the author adapts an instrument intended to support the spine, and which, with considerable modification, is constructed upon a principle similar to that of an instrument invented by Mr. Tamplin. This instrument is formed of a pelvic hoop of steel supporting a small crutch placed beneath the left axilla (in ordinary cases), and attached to an arm of steel passing obliquely from its under surface round the posterior part of the ribs, reaching as far as the centre of the spine, or to that point which the spine ought to occupy in the normal state; from this point it is made to pass vertically downwards, and is to be firmly fixed to the centre of the posterior part of the pelvic hoop by a simple apparatus which admits of the crutch, and with it the shoulder, being raised at pleasure. For the purpose of acting upon the curvature of the spine itself, and of keeping up pressure upon the expanded and projecting ribs on the right side, a broad plate is applied, shaped to fit the most convex part of the thorax, and made to extend round to the side of the ribs, so as to grasp them beneath the axilla; the extent to which it passes upwards or down-

wards depending on the size of the projection. A steel bar, strong enough to resist bending, and as slight as may be consistent with strength, is made to extend downwards from the inner or posterior edge of the plate, and long enough to reach to the centre of the pelvic hoop behind. The object of this bar being to act as a lever, it must have a fulcrum to move upon; this is gained by attaching it to the centre of the vertical bar of the crutch by means of a screw. The lower end of the lever is so shaped that a slide is made at right angles with it, crossed by a small button which keeps it braced down to the pelvic hoop. It is worked by a long screw, attached to one end of the slide passing through the button just mentioned. This screw is turned at pleasure by means of a key, drawing the lower end of the lever to the right side, and consequently throwing its upper end, and with it the plate which presses against the projecting side of the thorax, towards the left; the kind of force which is required to act upon the spine.

The author's remarks upon the discretion which is required to be employed, recommending exercise of the muscles in cases of lateral spinal curvature, are very judicious. He argues that:—

"To exercise the muscles of the back, including those of the upper extremities, without mechanically relieving the spine of its superincumbent weight, does more harm than good, and that it increases the deformity rather than relieves it; and that what is termed general increase of muscular development, by indiscriminately employing gymnastic exercises, is not to be recommended, particularly where the deformity does not depend on weakness of the muscles as the principal cause, but upon confinement and mechanical displacement of the bones of the vertebral column and ribs."

The author then proceeds to point out the characteristics of the various cases in which exercise of the muscles is either beneficial, useless, or injurious, but our space will not admit of our quoting his observations further upon this important point.

We think that the profession will peruse this sensible essay with considerable profit and satisfaction.

Correspondence.

DISEASES OF THE BLOOD-VESSELS.

SIR,—I know that authors are seldom allowed the opportunity of noticing the remarks of reviewers, but I trust that you will, in common fairness, permit me to reply to one observation which occurs in the notice of my work in your last number. The reviewer states "that the table of 551 cases will be found as little as possible available for statistical purposes." As all the deductions are drawn from this table, and all the cases arranged under the different kinds of aneurism; the complaint that they are "without order or distinction" is surely groundless. I state in my preface that the cases are taken indiscriminately from the British Journals. Had I grouped them in the manner the reviewer suggests, I question whether they would have been of more practical utility, as all cases possessing more than ordinary interest are specially alluded to.—I am, sir,

Your obedient servant,

EDWARDS CRISP.

Camberwell, Aug. 29th, 1847.

[The above remarks by Mr. Crisp do not appear to us in any way to subvert the opinion which was given in the review of his work. It is true that Mr. Crisp has drawn numerous deductions from the table alluded to, but we still maintain that the total want of arrangement of the cases contained in that table render it as little as possible available to other writers who might wish to employ it for purposes of reference. The following is an example of the order, or rather disorder in which the cases are placed in the table,—(20) ascending aorta; (21) common carotid; (22) L^t. internal carotid; (23) descending thoracic; (24) gluteal, &c. (p. 236).—ED. GAZ.]

Medical Intelligence.

STATUS OF THE MEDICAL ATTENDANTS OF PRISONS.

It is announced that arrangements have been made for the occupation of 400 cells in the newly-enlarged prison at Wakefield; and that number of prisoners, under sentence of transportation, will shortly be removed from the Millbank Prison to Wakefield. These convicts are to have a separate chaplain, surgeon, and wardens; the former at a salary of £250 a year, the latter at salaries varying from £90 to £80 and £60 per annum.

It appears from the above announcement that, in this instance, the Government, as well as the local authorities, have scrupulously adhered to their usual standard of

liberality in remunerating the labours of the medical profession. The chaplain attached to this domestic Norfolk Island stands foremost and alone, and will receive a salary not unbefitting a scholar and gentleman; the surgeon is ranked with the turnkeys, and will, it appears, be remunerated accordingly. We trust, however, to find that the unfavourable construction which must inevitably be given to the above announcement merely arises from a slight confusion in the wording of the newspaper paragraph, and not from an unpardonable error in the intentions of the prison authorities.

APOTHECARIES' HALL.

NAMES of Gentlemen who passed their Examination and received Certificates to Practise, on Thursday, August 26th, 1847:—Thomas Morris Ward, Ollerton—Patrick Downey, York—William Hand, Northwich—George Alfred Rhodes, Wakefield, Yorks—Sherard Freeman Statham, Cranford, Middlesex—William Emerson.

OBITUARY.

Died, on the 1st inst., in Gloucester Place, after a long and painful illness, Sir Richard Dobson, M.D., F.R.S., &c., Inspector of Hospitals and Fleets, aged 74. Sir Richard was well known as a distinguished and highly esteemed member of the medical staff of the Royal Navy. We believe that the last appointment held by Sir Richard was that of Physician to Greenwich Hospital. In addition to his other distinctions the deceased officer was a Knight of St. Vladimir, and a Knight of Dannebrog.

Died, on the 16th inst., at Oxford, deeply regretted, John Wootten, Esq. M.D. of Balliol College, and one of the Physicians of the Radcliffe Infirmary, in the 48th year of his age.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Aug. 21.

BIRTHS.		DEATHS.		Av. of 5 Sum.	
Males....	628	Males....	530	Males....	479
Females..	595	Females..	537	Females..	461
	1223		1067		940

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	191
NORTH—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 364,303)	206
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	207
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 393,247)	217
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich .. (Pop. 479,469)	236
Total	1037

CAUSES OF DEATH.

ALL CAUSES	1037	Av. of 5 Sum.
SPECIFIED CAUSES	1056	935
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	371	236
<i>Sporadic Diseases, viz.—</i>		
2. Dropsy, Cancer, &c. of uncertain seat	112	108
3. Brain, Spinal Marrow, Nerves, and Senses	146	157
4. Lungs and other Organs of Respiration	184	226
5. Heart and Bloodvessels	30	25
6. Stomach, Liver, and other Organs of Digestion	127	94
7. Diseases of the Kidneys, &c. ..	10	8
8. Childbirth, Diseases of the Uterus, &c.	12	10
9. Rheumatism, Diseases of the Bones, Joints, &c.	13	7
10. Skin, Cellular Tissue, &c.	7	3
11. Old Age	31	50
12. Violence, Privation, Cold, and Intemperance	13	28

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	24	Convulsion	40
Measles	44	Bronchitis	21
Scarlatina	29	Pneumonia	25
Hoop-cough	21	Phthisis	102
Typhus	62	Dis. of Lungs, &c. ..	19
Dropsy	14	Teething	17
Sudden deaths ..	3	Dis. Stomach, &c. ..	13
		Dis. of Liver, &c. ..	7
Hydrocephalus ..	33	Childbirth	10
Apoplexy	17	Dis. of Uterus, &c. ..	2
Paralysis	20		

REMARKS.—The total number of deaths was 117 above the weekly summer average: this excess is still due to the great, though somewhat decreasing prevalence of zymotic diseases. The deaths from typhus fever were 62, being rather more than double the summer average. Diarrhoea is still prevalent, but, since last week, the deaths have been reduced from 158 to 138. Of those who died from this cause, 110 were children. (The summer average is 55.) The deaths from small-pox, measles, dysentery, and cholera, were above the average; those from scarlatina were below the summer average.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	29.906
" " Thermometer	64.1
Self-registering do. max.	85.5 min. 53.3
" in the Thames water ..	65.1 — 65.

a From 12 observations daily. b Sun.

RAIN, in inches, 0.62: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 2.5° above the mean of the month.

NOTICES TO CORRESPONDENTS.

Communications have been received from Dr. Coley, Mr. A. Stephens, Dr. A. Buchanan, and Mr. Higginbottom.

The papers of Mr. Allison, and of a correspondent who dates from Fort Pitt, Chatham, shall receive our earliest attention.

We are obliged to Dr. Parkin for his communication, but it arrived after the announcement had been sent to press.

Lectures.

LECTURES

ON THE

DISEASES OF INFANCY AND
CHILDHOOD,

Delivered at the Middlesex Hospital,

By CHARLES WEST, M.D.

Physician-Accoucheur to, and Lecturer on Mid-
wifery at, the Middlesex Hospital, and Senior
Physician to the Royal Infirmary for Children.

LECTURE X.

*Hydrocephaloid disease—often succeeds to
sympathetic disturbance of brain in
course of various affections—supervening
on diarrhoea, pneumonia, and cerebral
congestion—diagnosis under each of these
circumstances.—Prophylaxis, and treat-
ment.*

*Tubercle of the brain—its frequency in
childhood—its anatomical characters—
symptoms—occasionally absent—gene-
rally very obscure—diversities in this
respect cannot be explained by the mor-
bid appearances.—Occasional recovery
where symptoms of cerebral tubercle
have long existed.—Treatment.*

Hydatids and cancer of the brain.

CLOSELY connected with the state of atrophy of the brain, which we examined in the last lecture, is that condition which is induced if the organ be somewhat suddenly deprived of its usual supply of blood. Even in the adult a profuse loss of blood is followed, as you well know, by extremely severe headache, and by various other cerebral symptoms. In the child, whose brain needs for the due performance of its functions a proportionably larger quantity of blood, the symptoms that follow its excessive loss are of a corresponding gravity. Often, indeed, they present a striking similarity to those which betoken inflammation of the brain; a fact implied in the name of the *hydrocephaloid disease*, by which Dr. Marshall Hall, who was among the first to call the notice of the profession to this affection, has proposed that it should be designated.

"This affection," says he, in his admirable essay on the subject,* "may be divided into two stages: the first, that of irrita-

bility; the second, that of torpor. In the former there appears to be a feeble attempt at reaction; in the latter, the powers appear to be more prostrate. These two stages resemble in many of their symptoms the first and second stages of hydrocephalus respectively.

"In the first stage the infant becomes irritable, restless, and feverish; the face flushed, the surface hot, and the pulse frequent; there is an undue sensitiveness of the nerves of feeling, and the little patient starts on being touched, or from any sudden noise; there are sighing and moaning during sleep, and screaming; the bowels are flatulent and loose, and the evacuations are mucous and disordered.

"If, through an erroneous notion as to the nature of this affection, nourishment and cordials be not given, or if the diarrhoea continue, either spontaneously, or from the administration of medicine, the exhaustion which ensues is apt to lead to a very different train of symptoms. The countenance becomes pale, and the cheeks cool or cold; the eyelids are half closed; the eyes are unfixed, and unattracted by any object placed before them, the pupils unmoved on the approach of light; the breathing, from being quick, becomes irregular, and effected by sighs; the voice becomes husky, and there is sometimes a husky, teasing cough; and eventually, if the strength of the little patient continue to decline, there is a crepitus or rattling in the breathing; the evacuations are usually green; the feet are apt to be cold."

In early infancy symptoms of this kind sometimes succeed to premature weaning, especially if that be followed by an unsuitable diet, but afterwards they generally succeed to some definite attack of illness, either exhausting in itself, or for the cure of which active measures had been necessary. It is important, too, to bear in mind that they are not equally apt to come on in the course of all diseases, but that those in the early stages of which considerable cerebral irritation has existed are much more likely to assume the characters of this spurious hydrocephalus when the bodily powers are exhausted.

There is no disorder in which the two conditions of considerable sympathetic disturbance of the brain, coupled with rapid exhaustion of the vital powers, are so completely fulfilled as in infantile diarrhoea, and in no other affection do we meet with such frequent or such well-marked instances of the surpervention of the hydrocephaloid disease.

It is not long since a previously healthy boy, aged 18 months, was brought to me suffering from vomiting and diarrhoea which had existed for three days previously.

* Republished in his work *On the Diseases and Derangement of the Nervous System*. 8vo. London, 1841. Chap. v. Section iii. It can scarcely be necessary to refer to Dr. Goode's paper "On Symptoms in Children erroneously attributed to Congestion of the Brain," for another most graphic account of this disorder.

After treatment had been continued for two days the purging ceased, but the child seemed to have a distaste for all nourishment, and refused both milk and arrow-root, and the mother made but few attempts to overcome this repugnance, so that for 24 hours the child took hardly anything except water, and barley water, and those in small quantities. On the afternoon of the 6th day the child became faint, and seemed so feeble during the night that the mother became much alarmed, and came again to me on the morning of the 7th day. The child's face was then sunken and very anxious; it lay, as if dozing, with half closed eyes; breathing hurriedly; suddenly waking up from time to time in a state of alarm and restlessness, and then in a few moments subsiding into its former condition. The skin was dry but cool; the extremities were almost cold; the lips were dry and parched, and some sordes had collected about the teeth; the tongue was dry, red, and glazed, and coated in the centre, and towards the root with yellowish fur. The pulse was extremely feeble. There was very great thirst. The bowels had not acted for twelve hours.

I ordered the child a tablespoonful of equal parts of milk and barley water every half hour, with the addition of fifteen drops of brandy every hour, and directed that some strong veal broth should be prepared and given every two hours. At the same time, a draught containing ten grains of aromatic confection, half a drachm of the compound tincture of bark, and six drops of sal volatile, was given every three hours, and a grain of Dover's powder was directed to be taken at bed-time.

Within six hours after the commencement of this treatment the child began to improve; it slept tolerably well in the night, and the next day was lying tranquilly in bed looking about and smiling cheerfully; the extremities were warmer, and the skin had lost its harshness; the tongue was no longer dry, and the pulse had increased in power. The stimulants were gradually withdrawn; no further bad symptom came on, and the child was soon convalescent.

It is of great importance rightly to interpret the meaning of the symptoms which attend the first stage of this affection, and to discriminate between the cerebral disturbance of approaching exhaustion, and that which implies the existence of real mischief in the brain.

A little girl was seized with diarrhoea on Aug. 8th, which at first was severe, but soon yielded to treatment, and she was again convalescent, when, on the 15th, vomiting and purging returned with great violence, and were attended with much febrile disturbance. On the following day she was still worse in all respects, but was not brought

to me again until the 17th. She then looked exceedingly ill, her face was sallow, but with a flush on each cheek, and her eyes were deeply sunk. She lay in a half dozing state with her eyelids half closed, and the eyeballs turned upwards, so that nothing but the sclerotics was visible; but from this condition she awoke frequently and suddenly in a state of great alarm, and looking as if she were about to have a fit of convulsions. Her skin was hot and very dry; her pulse very frequent, but not strong, and there was some subsultus of the tendons of the wrist. The abdomen was rather tympanitic; the tongue red, coated with white mucus; the thirst was great, the vomiting very frequent, and the bowels acted two or three times in the course of an hour, the evacuations having the appearance of dirty water.

The child was immediately placed in a tepid bath; an enema containing five drops of laudanum was next administered, and the abdomen was covered with a large bran poultice. The extreme irritability was almost immediately relieved by the warm bath, and still further soothed by the enema. The bowels ceased to act so frequently, and the stomach began to bear small quantities of barley water and other drinks which were given cold. In a few hours the imminent danger had passed away, and the child recovered in the course of a few days.

If, in a case of this kind, you fall into the error of regarding the cerebral symptoms as the signs of active disease, and withhold the Dover's powder, or the opiate enema that might have checked the diarrhoea and soothed the irritability, while you apply cold lotions to the head, and give the child nothing more nutritious than barley water in small quantities, because the irritability of the stomach which results from weakness seems to you to be the indication of disease in the brain, the restlessness will before long alternate with coma, and the child will die either comatose or in convulsions.

But it is not only in the course of diarrhoea that errors of this sort may be committed. The early stages of pneumonia are often attended with so much sympathetic disturbance of the brain, as to throw the other symptoms into the background. The child vomits, it refers all its suffering to its head, and possibly has an attack of convulsions almost at the outset. You not unnaturally assume the case to be one of cerebral congestion, and treat it accordingly with free local depletion. On the next day the indications of disordered respiration are more apparent; you think your former diagnosis was incorrect, and probably apply more leeches to the chest to combat the pneumonia you had overlooked. The urgency of the symptoms may be relieved by

these means, or, if that be not the case, still the reaction will diminish with the diminished power, and the child for a short time seems to suffer less. But soon the restlessness of exhaustion comes on, and then follow the soporose condition and the apparent coma; you condemn yourself for having overlooked the cerebral mischief of which you fancy that you now have most convincing proof: you renew your antiphlogistic measures, to arrest, if it be not too late, this imaginary hydrocephalus, and your patient dies.

Something of the same kind, too, may happen in cases where the brain has really been congested, and where the depletion which you practised somewhat too freely was in reality indicated, though to a smaller amount. The restlessness and heat of head may have been diminished by your treatment, and the bowels may have been relieved by the purgatives you administered. In a few hours, however, restlessness returns, though not to so great a degree as before; the child moans sadly when awake; and this suffering state alternates with a drowsy condition, while the stomach, irritable before, now rejects every thing almost as soon as swallowed, though the child still seems eager for drink. The previous arrest of very similar symptoms, though but for a few hours, by active treatment, seems to you to indicate the propriety of continuing the same plan, but nevertheless the drowsiness deepens into coma, and the child dies of hydrocephalus, as you suppose,—in reality of the *stima cura medici*.

"Forewarned, forearmed," says the old proverb. When head symptoms come on in the infant, do not judge of their import simply from the present condition of the child, but ascertain its previous history. Learn whether any other members of the family have had hydrocephalus, or been consumptive. Inquire whether this infant has thriven at the breast, or whether it has for some time been drooping; if already weaned, ascertain on what it is now fed—whether signs of declining health soon followed on the change of diet, while it thrived so long as it was suckled. Ask what signs of disorder of the bowels there have been, and observe at what times the vomiting comes on; whether only after sucking or taking food, or whether efforts to vomit occur when the stomach is quite empty.

In a case where the symptoms of cerebral disturbance, and those of disordered respiration, come on almost at the same time in a previously healthy child, and so alternate with each other as to render your diagnosis difficult, you will do well to remember that pneumonia often sets in with much sympathetic disorder of the nervous system, and

that the disease is much more likely to be seated in the lungs than in the brain. In most cases auscultation will enable you to decide the question, and if you once accustom yourselves to listen to a child's chest as invariably as you would look at its tongue or count its pulse, you will but seldom have to reproach yourselves for the uncertain diagnosis, and the vacillating treatment into which in cases of this description you will otherwise be too often betrayed.

In a child suffering from diarrhoea, you will be prepared to meet with sympathetic disturbance of the brain, and will not allow the occurrence of its symptoms to deter you from adopting the treatment which the diarrhoea requires. If doubt cross your mind as to their signification, and you fear lest mischief be really going on in the brain, it will usually suffice to watch the symptoms closely, in order to detect a want of correspondence between them, which would not exist if true cerebral disease existed. Attention to this point will guard you from error during the stage of excitement, as well as in that of exhaustion and stupor, which simulates the last stage of hydrocephalus.

Under no circumstances are mistakes more easily committed, and never are their results more mischievous, than when real congestion of the brain has been somewhat over-treated, and the consequent symptoms of exhaustion are supposed to be those of advancing disease. In such a case, however, it would usually be observed that great faintness had been induced by the first depletion, and that the quiet which succeeded it was that of exhaustion as much as of mitigated suffering. If so, the returning restlessness would probably be the index of the feeble power of the brain, no longer adequate to the performance of its wonted functions, rather than the evidence of active disease of the organ. Nor would the history be the only safeguard from error, but the fontanelle sunk below the level of the cranial bones, instead of being tense and pulsating, the cool surface, and the pulse presenting no other characters than those of frequency and feebleness, would all point to the real nature of the case. You do not need to be told that to deplete under such circumstances would be to destroy your patient—that food is needed, not physic. The sunken powers of life are to be rallied; and as their strength returns, the functions of the brain will again go on harmoniously.

Although the diagnosis of this affection is sometimes attended with difficulty, the rules for its prevention and its cure are happily very simple. Bearing in mind the possible supervention of the hydrocephaloid disease, you would never keep an infant from the breast, nor put a young child on a spare diet for several days, without most absolute

necessity ; you would pay especial attention to its food, if the disease from which it suffers be, like diarrhoea, such as interferes directly with its nutrition. Again, you would not trust depletion of a young child, especially if suffering from head affection, to a nurse, but would yourselves exercise the supervision of it. And, lastly, in the treatment of every disease you would at once suspend the antiphlogistic measures that you had previously been adopting, and resort to the use of stimulants and tonics so soon as any of the symptoms that we have been examining make their appearance.

The state of general restlessness and irritability that attends the early stages of exhaustion is often greatly soothed by the tepid bath, continued for not more than five minutes, for fear of still further depressing the infant's powers. While you secure a free access of air, too, you must be extremely cautious to maintain the room at a sufficient temperature; for the power of generating heat is diminished in a very remarkable degree in young animals who, from any cause, are insufficiently nourished. The irritability of the stomach is best overcome by giving nourishment in extremely small quantities,—as a dessert-spoonful of asses' milk for an infant, or of veal-tea for an older child, given by little and little every half hour. If the symptoms have succeeded to weaning, a healthy wet-nurse should, if possible, be at once obtained; but as the effort to suck seems sometimes to exhaust the child, and, probably, thereby to favour vomiting, it is sometimes better at first to give the nurse's milk by a tea-spoon. If the exhaustion be very great, and a state analogous to coma impending, a hot mustard bath is sometimes serviceable in rousing the child, while, at the same time, a few drops of *sal volatile*, or of brandy, may be given every few hours. It is desirable, however, to suspend the use of the more powerful direct stimulants so soon as it can safely be done, though a nutritious diet will be necessary for some time. Tonic medicines, likewise, are often of much service, few of which are preferable to the extract of bark, which, dissolved in caraway water, mixed with a few drops of the tincture, and well sweetened, will be taken very readily by most children. The addition of a little milk to the medicine when taken still further covers any unpleasant taste.

Those cases in which the brain becomes the seat of various morbid growths still remain for us to consider before we pass to the study of affections of the spinal chord.

In the child, as in the adult, the brain may become the seat of hydatid cysts, or of cancerous tumors, or of tubercular deposits; but I should not detain you long with their study, if it were not that the last of these

three morbid conditions, though exceedingly rare in the adult, is by no means unusual in the child. Thus, while M. Louis met with only a single case in which the brain contained tubercle, out of 117 examinations of adults, who had died of phthisis, MM. Rilliet and Barthez discovered tubercle in the brain of 37 out of 312 children, between the ages of 1 and 15, in some organ or other of whose body this morbid deposit existed. You will remember that I am not now speaking of cases where tubercle is present merely in the membranes of the brain, producing that granular appearance to which I called your attention when treating of acute hydrocephalus; but my remarks refer to separate deposits of tubercular matter in the substance of the brain. These deposits are for the most part distinctly circumscribed, of a rounded form, and varying in dimensions from the size of a millet seed to that of a split pea, or of a bean, or even larger. The largest mass that I ever met with in the brain of a child was almost as big as a sugared almond, but they have been seen three or four times as large. Sometimes there is but a single deposit in the brain, but in the great majority of cases there are three or four small deposits, of the size of a millet seed, or rather larger, as well as a single mass of greater magnitude. Sometimes, though not often, the deposits of tubercle are limited to one hemisphere of the brain; but it generally happens that there is a marked preponderance of the affection on one side. The situation of these deposits varies greatly, and they have been found in all parts of the brain, both on its surface and in its interior. The smaller deposits are, I think, most frequently observed on the convexity of the brain, and they are then found closely adherent to the pia mater, to which they remain attached if that membrane be stripped off. They seem, however, to have some connexion with the cerebral substance besides mere juxtaposition, since a thin investment of it clings to them, and the place where they were situated may be seen after their removal to be quite uneven. Even when situated at the base of the brain, or in the cerebellum, they often retain this relation to the pia mater; and those larger masses, which generally appear more deeply seated, will often be found, if the convolutions be unfolded, to have been in reality not so far removed from the surface. Sometimes a distinct, firm, fibrous capsule may be found investing the deposit; but this is often absent, or, at any rate, so delicate as not to be clearly perceptible. I have never seen these deposits presenting the characters of the grey semi-transparent tubercle frequently noticed in the lungs, but Rokitsansky mentions having occasionally found portions of a deposit in this stage, while the remainder

had undergone the transformation into the ordinary friable yellow tuberculous matter. Softening sometimes goes on in cerebral tubercles; the process beginning in the centre, and gradually extending towards the periphery, till the contents of the capsule become of a puriform appearance and consistence. This change, however, is comparatively rare, for in the majority of cases fatal cerebral disturbance comes on while the tubercle is yet in a crude state, and the cerebral substance immediately around it is then very often found in a condition of acute softening, perfectly diffused, and of a bright rose tint, though this change generally does not reach beyond a depth of two or three lines.

Cerebral tubercle does not invariably affect the rounded form, but it occasionally extends as a patch, half an inch or more in length, by two or three lines in breadth, immediately beneath the pia mater, and not reaching above one or two lines deep into the cerebral substance, which is usually slightly softened beneath it.

Very often, but by no means invariably, these tubercular deposits in the cerebral substance are associated with that granular state of the membranes which I described to you as occurring in many cases of hydrocephalus. Thickening of the membranes, and effusion of hyaline matter into the pia mater at the base of the brain,—the evidences, in short, of meningitis,—are often present, as well as abundant effusion of fluid into the ventricles, and softening of the central parts of the brain. Sometimes, however, the signs of inflammation of the membranes exist without any effusion into the ventricles, and, in a few instances, the ventricles contain an abundance of fluid, but no softening of the central parts of the brain exists, nor any sign of inflammation of the membranes.

I know of no instance in which tubercle was limited to the brain in childhood, but if present there it always exists in other viscera, and is but one of the results of that general cachexia which may shew itself in any of the various forms of scrofulous or phthisical disease.

I am unacquainted with any special cause that renders the brain more liable to this disease in childhood than in adult age, or even in youth. It certainly is not owing simply to the intensity of the tuberculous cachexia, and the consequently greater abundance of the morbid deposit, for I have met with many instances of far more extensive tubercular degeneration than existed in those cases where the brain had become its seat.

Cases are not yet recorded in numbers sufficient for us to determine accurately the time of the greatest liability to this affection: Dr. Green states from 3 to 7 years of age to be the period of its greatest frequency, and

MM. Rilliet and Barthez likewise consider it less usual before than after 3 years of age. Their observations, it should be remembered, were made at the Hôpital des Enfants at Paris, into which children under 3 years old are comparatively seldom admitted. It seems probable that their estimate of the age at which the disease most commonly occurs is somewhat too high, for 17 out of 32 cases recorded by Dr. Mantner occurred in children whose age did not exceed 3 years, and the same holds good with reference to 7 out of 8 fatal cases that came under my own notice.

We come now to the examination of a very difficult question—namely, that of the symptoms of this affection. The difficulty arises from many sources; for sometimes the disease gives rise to no symptoms at all, and its existence is not discovered till after death; and, even when symptoms are present, neither their character nor their intensity bear any invariable relation to the extent of the local mischief or its seat; while, lastly, the symptoms that usually betoken tubercle of the brain sometimes exist where no such morbid growth occupies the organ.

Cases in which no symptom whatever marks during life the presence of the morbid deposit in the brain, are unusual. Much more frequent are those in which the signs of cerebral disturbance, though not entirely absent, are too vague to excite much attention, and too slight to occasion much suffering; so that, if they do not wholly escape notice, they are confounded with other indications of ill health attendant on the general tuberculization with which this disease of the brain is frequently associated. No reason can be assigned for this latency of the affection in some instances, for it does not appear to depend either on the small size of the tubercle or on its situation. To the best of my knowledge, however, the brain in the immediate neighbourhood of the tubercular deposit does not present any sign of softening in cases which have been characterised by this absence of the signs of cerebral disturbance. It would be a plausible way of explaining these cases, to assume that, when symptoms are observed, they do not depend simply on the presence of tubercle, but rather on the changes in the surrounding brain. This hypothesis, however, is contradicted by the fact that cerebral symptoms sometimes occur in cases where no perceptible disorganization of the brain has taken place either around the tubercle or elsewhere.

In the greater number of instances, the absence of cerebral symptoms lasts only to within a short time of the patient's death, which takes place rather suddenly under the indications of most serious cerebral disease. This acute stage lasts sometimes for a few

hours only, and a child who had shown no sign of head affection, though probably the symptoms of phthisis had long been present, suddenly sinks into a state of stupor, which deepens into profound and fatal coma. In other cases a fit suddenly takes place, followed by paralysis of one limb, or of the whole of one side, and either is immediately succeeded by coma, or the comatose condition does not come on till after the recurrence once or oftener of the convulsions. In other instances the fatal event is preceded by the symptoms of acute hydrocephalus, which make their appearance suddenly, and run their course in a few days. This sudden outbreak of symptoms usually takes place caselessly, but I have seen it succeed to a blow on the head, even though not severe. You must here observe, that, though I have mentioned various ways in which the cerebral disturbance may manifest itself, yet we cannot predicate, from differences in this respect, either the seat or the extent of the deposit, or the nature of the mischief that is associated with it.

Quite as variable, and equally difficult of interpretation, are the symptoms of the previous stage, in which, though life is not in immediate jeopardy, yet the functions of the brain are manifestly disordered. Dr. Hennis Green, in his valuable paper on Tubercle of the Brain in Children, published in vol. xxv. of the *Medico-Chirurgical Transactions*, mentions pain in the head as the most constant symptom of this stage of the affection, he having met with it as a prominent feature of the disease in 17 out of 20 cases. The symptom is certainly of very frequent occurrence, but it attends upon so many affections of the brain, that, taken by itself, its diagnostic value is but small.

It is but seldom that any connexion can be traced between the seat of the tubercle and the situation of the pain, which is, for the most part, referred to the forehead. The pain is often very severe; so that, during its continuance, the child is entirely taken up with its suffering, and shrieks with the severity of the pain; but it does not continue with this intensity for more than a few hours, and on the next day the child will be found to be no worse than usual. Vomiting in many instances attends these exacerbations of pain; and, when this is the case, the absence of any gastric disorder sufficient to account for it will lead you to suspect the presence of tubercle in the brain. In some cases, however, the headache, though severe, does not present this remarkable intensity, while there is so much permanent impairment of the general health, that an occasional attack of sickness does not surprise you. On the other hand, you will meet with delicate children in whom attacks of violent headache, sometimes accompanied by vomit-

ing, will come on from very slight causes, or apparently without any cause at all, and will return at irregular intervals for years together, till they gradually subside as the health becomes more robust, and cease altogether at the period of puberty, or sooner. In infants, and in children under two years of age, we of course lose the evidence which is afforded by the patient's complaints of headache, and can only infer it to be present from the occasional loss of cheerfulness and the attacks of fretfulness and crying. Sometimes, too, the suffering of the brain shews itself in other ways besides headache. The temper becomes wayward and passionate, or a general dullness steals over all the faculties, and the child grows quite indifferent to what is going on around it. One little boy, aged two years, whom I watched for some weeks before his death, never made any complaint of headache. He was fretful, and cried if moved, but was perfectly quiet if allowed to remain in his chair, where he would sit half-dozing for hours together.

Affections of the motor system are often among the early indications of this disease, but neither are they so definite as to present anything pathognomonic of cerebral tubercle. A boy who died at three and a half years old, and in the left hemisphere of whose cerebellum there was a tubercle as large as a pea, had been subject from his earliest infancy to an almost constant and involuntary rotatory movement of the head when in the recumbent posture. And in another boy, who was two years old at death, the head had hung for four months towards the left shoulder before any other symptom of mischief in the brain appeared; convulsions then suddenly came on, and the child died in 72 hours. Sometimes paralysis of a limb comes on gradually, or, though actual paralysis does not exist, yet the power over one side becomes greatly weakened, and the child drags one leg, or is observed invariably to use one arm in preference to the other. Convulsive movements, however, are the most frequent of the affections of the motor system; and paralysis of a limb, or impaired power over it, usually succeed to their occurrence, and but seldom take place independently of them. Sometimes we observe nothing more than an occasional attack of convulsive twitching of one limb (oftener of the arm than of the leg), unattended with any loss of consciousness or impairment of intellect; but the seizure is more frequently attended with insensibility, though the convulsive movement may be limited to one side or even to one limb. Convulsions affecting one side only are sometimes seen, although tubercle is present in both hemispheres; or in other instances both sides are affected by the convulsions, and yet the deposit is found only in one hemisphere of

the brain. When convulsions, whether general or partial, have once occurred, they are seldom absent for many days together, though to this there are occasional exceptions in which a pause of many months ensues after the first convulsive seizure; the general health, indeed, being impaired, but no sign indicating the special mischief that exists in the brain.

The transition from the premonitory to the acute stage sometimes takes place gradually, the convulsions becoming more and more frequent, and the other cerebral symptoms more serious, and the intervals of freedom from suffering shorter; or the change takes place suddenly, and without such previous increase in the severity of the child's sufferings as to make you anticipate its approaching death; and yet we cannot always discover such differences between the morbid appearances in the two cases as should explain the dissimilar course of the disease.

I do not wish for one moment to exaggerate the difficulties that attend the diagnosis of this affection; but at the same time, if we assume that we have to do with an incurable disease, we are less likely to use efficient means of treatment than if we feel that there is still some room for hope. While, therefore, I would have you bear in mind that the symptoms which we have been passing in review, especially if associated with indications of tubercle in other organs, render the presence of tubercle in the brain in the highest degree probable, they yet do not afford any absolutely certain evidence of it. Headache, aggravated at intervals, and associated with occasional convulsive movements of one limb, and even with attacks of an epileptic character, may occur in children who yet after a time may recover, and shew, by the robust health they subsequently attain to, that some cause of a less abiding nature than tubercular deposit must have given rise to the disturbance of the brain; or, on the other hand, though serious cerebral disease may exist, and such as gives rise at length to a fatal result, yet it may appear after death that it was such as would have been mitigated, if not cured, by appropriate treatment.

You must not, then, be merely passive spectators of these symptoms; and, if you watch cases of this kind with attention, you will generally find that they afford you some clue to the treatment that you should follow. Either there is manifest gastric and intestinal disorder, or there are indications of a state of general debility, or there are signs of inflammatory disease in the brain. In the first case, the regulation of the bowels, and the careful management of the diet, are obviously indicated; in the second, iron may be given with advantage, and the shower-

bath may be cautiously tried, and, if it do not alarm the child, it may often be continued with much benefit. In those cases where there seems to be some slow mischief in the brain, I have once or twice seen recovery take place, contrary to all my anticipations, from the employment of small doses of mercury night and morning, persevered with for many weeks. In such cases, too, counter-irritation by means of the tartar-emetic ointment rubbed into the back of the neck is often followed by the happiest effects. A little girl, 14 months old, is at present under my care for the frequent recurrence of convulsive attacks of a very anomalous character. So long as a discharge is kept up from her neck by the tartar-emetic ointment, the fits do not occur; but if the discharge ceases for two or three days, they are sure to return.

These are the principles by which your conduct must be governed; but you will find that each case will present some special peculiarity, and will need to be studied and treated for itself.

Tumors of other kinds may exist in the brain in childhood, though they appear to be more frequent in the middle-aged or the old. I once saw a case in which *Hydatids* had formed in the substance of the brain in a girl of 7 years old; and I once saw *cancer* affecting the brain and its membranes in a boy two and a half years old. But, though such occurrences are interesting from their rarity, I do not know any circumstance, except the absence of the signs of tubercular disease in the patient, by which you could determine during life that certain cerebral symptoms arise from *hydatids* or *cancer* of the brain, and not from tubercle in that organ.

DISCOVERY OF TRUTH IN SCIENCE.

For the discovery of truth it is needed that the facts of nature should be questioned by man's intelligence. For this questioning, the first of all conditions is, that he should have those facts clear, defined, separated from others, ascertained in themselves. That he should so have studied them as to know their true relations, to see through seeming resemblances, to catch the scattered hints which declare, in the midst of apparent dissimilarity, real connexion; to see the value of a fact, which, having been arbitrarily thrust from its true place, has seemed hitherto a perplexing superfluity; that he should thus have plain and clear before him the elements, of which the insight of his highest reason is to suggest to him the law.—*Bishop Wilberforce.*

ON
CHEMISTRY AND THE MICROSCOPE
IN RELATION TO
PRACTICAL MEDICINE.

By GEORGE E. DAY, M.A. & L. M. Cantab.
Member of the Royal College of Physicians,
Lecturer on Animal Chemistry and Histology
at the Middlesex Hospital School, and Physi-
cician to the Western General Dispensary.

LECTURE III.

Gelatinogenous tissues.—*Properties of areolar or cellular tissue.*—*Gelatin—its identity of composition with the substances yielding it—its chemical composition and properties.*—*Explanation of the action of drugs containing tannin on the organism.*—*Origin of the gelatinogenous tissues in the body—products of their decomposition.*—*Gelatin yields prussic, acetic, valericianic, and benzoic acids, besides certain essential oils, when oxidised.*—*Leucin.*—*Glycocoll, or Gelatin sugar.*—*Mulder's views regarding the probable use of sugar.*—*Chondrin.*—*Physiological connection between the tissues yielding chondrin and gelatin.*—*Extractive matters.*—*Creatine.*—*Creatinine.*—*Sarcosine.*—*Inosinic acid.*

TO-DAY, gentlemen, we commence with the consideration of the *gelatinous substances*, and the remarks I have to offer on them are, for the most part, taken from Mulder's excellent work on "The Chemistry of Vegetable and Animal Physiology," to which I have already, more than once, had occasion to refer in the preceding lectures.

You are aware that all organized bodies in both kingdoms of nature are formed from cells. In the vegetable kingdom the cells are formed from a material termed cellulose, in combination, usually, with a little pectin: in animals the case is similar, although the elementary form of the tissue, and its chemical properties, are different.

In the latter case, we must distinguish between the persistent and the primary cellular substance: the primary is probably of various kinds, while the persistent has a general or universal character; it differs in various organs, and is gradually supplanted by the general cellular substance, in which other substances are afterwards secreted, so as entirely to obliterate its cellular form.

This general or persistent cellular substance (areolar tissue) must therefore be sought for in animals and in organs which are fully developed. In the higher classes of animals it constitutes the greater part of their substance; hence, a great many substances, when analysed, yield, for the most part, the same constituents.

It is so universally distributed over the body, that if we could remove all other substances it would exhibit the entire form of the body, and of its principal constituents: it forms the skin, the serous membranes, the sheaths of the muscles, the organic portions of bones, and enters into many other parts.

Its properties are not very fully known: it is insoluble in cold water; acetic acid renders it transparent and bulky; tannin renders it solid, and preserves it from putrefaction, and it produces a jelly when boiled with water, and allowed to cool: in consequence of the latter property it has received the name of *gelatinogenous matter*.

It does not follow that all substances yielding a jelly when boiled with water consist of the same tissue,—several dissimilar tissues possessing this property.

The principal mass of the gelatinogenous tissues—that general substance, which in its function must be compared with the cellulose of plants—is termed *gelatin* or *glutin*.

It may be obtained in a state of purity from common glue, of which it forms the chief ingredient. On placing glue in cold water it swells into a tremulous jelly, but does not dissolve; the cold water must be changed as long as it continues to remove any thing from the glue. After being thus purified, it must be heated till it is quite fluid, and then strained through a cloth; it stiffens on cooling, and, when dried, pre-pure gelatin.

Hence, substances consisting almost entirely of gelatinogenous tissue, when boiled with water, pass from the insoluble to the soluble state; thus the air-bladder of a fish, when boiled in water, did not leave more than 1.7 p.c of insoluble epithelium. The same is the case with all other substances formed of areolar tissue; and thus they may be considered, in relation to their essential constituent, as chemically identical with gelatinous substances, or, in other words, of matter which on boiling is almost entirely converted into gelatin.

During this process, no change of composition seems to occur; for on subjecting a serous membrane to ultimate analysis, we obtain from 100 parts nearly the same proportions of carbon, hydrogen, nitrogen, and oxygen, as from the gelatin obtained on boiling the serous membrane; and the same holds good for the skin, the areolar tissue, and many other parts of the body.

The gelatinogenous substance in all these parts is insoluble in cold water, and on boiling merely undergoes a physical change, without being chemically altered; nothing is taken up, and nothing separated.

The only known instance in which a gelatinous substance is soluble in cold water, is presented by the gelatinous envelope of silk, and the spider threads of autumn; Mulder

thinks it possible, however, that it exists in the blood. Whenever gelatin forms a part of the solid structures of the body, it can only be dissolved out of them by water at a boiling temperature. Analyses of gelatin have been made by Mulder,* Cop, Van Goudoever, and Von Bibra,† and of several

	Hartshorn (Mulder)	Isinglass mean of two analyses. (Mulder.).
Carbon	50.05	50.76
Hydrogen	6.56	6.64
Nitrogen	18.37	18.31
Oxygen	25.02	24.29

Mulder has omitted to mention the presence of sulphur in gelatin; Von Bibra always discovered traces of it, and according to Schlieper, it forms about 0.5 p. c.; it leaves a small ash, consisting of phosphates of lime and soda.

If an aqueous solution of gelatin be stronger than 1 to 100, it forms a clear jelly on cooling. A luke-warm aqueous solution is precipitated by tannin and by alcohol, but not by alum, acetate of lead, sulphate of iron, or acetic acid.

Tannin is by far the most important test, and will precipitate it when diluted 5000 times; the extreme facility with which it acts on gelatinous matters gives a clue to the medicinal action of astringent drugs on the human organism. They at once form insoluble compounds, (for tannin acts similarly on the protein compounds,) and do not enter the blood: only a very small quantity of the tannin contained in the ordinary doses of Peruvian bark, willow bark, catechu, and the other astringents, enters the blood. According to Mulder, a less amount of tannin than is contained in one ounce of Peruvian bark would, if conveyed directly into the blood, cause instantaneous death.

It is not known, with any degree of certainty, how the gelatinous tissues are produced in the animal body; they are undoubtedly not derived in a direct manner from vegetables. In the introduction to "Simon's Chemistry" you will find a sketch of an hypothesis, showing how gelatinous tissue, a crystalline substance termed leucin, carbonic acid and water, may possibly be formed from the decomposition of the protein in the blood, merely through the action of the alkali of the serum, and the oxidizing influence of the atmosphere.

Neither are we well acquainted with the products of the decomposition of the gelatinous tissues, in consequence of the insufficiency of our knowledge of the substances produced by the decomposition of gelatin. By the influence of oxidation (by distillation

* Mulder, Op. cit. p. 333, note; in which reference will be found to the analyses of Cop, Van Goudoever, and Scherer.

† Chemische Untersuchungen über die Knochen und Zähne, von Dr. Fr. V. Bibra, p. 402.

gelatinous tissues, as isinglass, tendons and the sclerotic coat of the eye, by Scherer. Its composition is expressed by the formula $C_{12}H_{10}N_2O_8$, whether obtained from gelatin, from hartshorn, from isinglass, from silk, or from cartilage.

Silk. (Mulder.)	Cartilage. (Von Bibra.)	Calculated from $C_{12}H_{10}N_2O_8$.
49.49	50.40	50.37
6.36	7.11	6.33
19.19	18.16	17.95
24.96	24.33	25.35

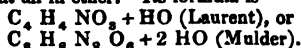
with chromic acid) there are formed prussic acid* in large quantity, acetic, valeric, and benzoic acids, and certain essential oils. On boiling gelatin in an excess of caustic alkali till ammonia ceases to be developed, sugar of gelatin (glycocoll), leucin, and extractive matters are formed. Finally, when boiled with dilute sulphuric acid, gelatin yields extractive matters with either glycocoll or leucin. The fact that the protein compounds, treated with potash, also yield leucin, indicates the close connexion between them and the gelatinous tissues, shewing that they both give the same products of decomposition under certain conditions.

Leucin is a crystalline substance which may be obtained under very different circumstances, with or without glycocoll, from fibrin, albumen, casein, or gelatin. It occurs in brilliant plates, resembling those of cholesterol. It is soluble in water and alcohol, but not in ether. Its formula is $C_{12}H_{12}NO_4$, which corresponds with the numbers—

Carbon	55.79
Hydrogen	9.11
Nitrogen	10.77
Oxygen	24.33

Leucin has never yet been found in the animal body.

Glycocoll or sugar of gelatin crystallizes in colourless prisms from a solution in alcohol, and in rhombs from a weak spirituous solution. These crystals possess a very sweet taste, are perfectly neutral, are freely soluble in water, much less so in alcohol, and not at all in ether. Its formula is



If we subtract from Mulder's formula the formula for urea ($C_2H_4N_2O_2$), we obtain a formula representing half an equivalent of ordinary sugar. Hence Mulder concludes, that "in animals, sugar is a component part of the gelatinous

* In connexion with the production of hydrocyanic acid from gelatin by oxidation, the following memoirs may be consulted:—Persoz in Comptes Rendus, vol. 13, p. 141; Marchand, in Journal für prakt. Chemie, vol. 35, p. 303; and Schlieper, in Liebig u. Wöhler's Annalen, vol. 59, p. 1.

tissues; but, when separated from its state of combination in these tissues, it may perform the same function as when either cane or grape sugar is supplied to the animal for food: in other words, there exists in the substances which yield gelatin a primary matter which exists also in cane sugar. If, then, substances or tissues containing gelatin are employed in effecting the change of materials which takes place in the animal, this primary matter may serve the same purpose as cane sugar, when supplied to feed the body. For this reason gelatin sugar ought really to be classed amongst the nourishing substances. If gelatin sugar be in reality a compound of cane sugar in which one equivalent of urea has been substituted for one of water, it is highly probable that, when sugar is brought into the body with the food, it may there form numerous combinations, and may therefore by no means be destined merely to maintain the function of respiration. If gelatin be formed in the animal body, then sugar, either derived directly from the food, or produced from starch in the alimentary canal, may be used for this purpose."

These views of Mulder regarding the uses of sugar must at present be regarded as merely hypothetical. They shew us, however, that "if the areolar tissue formed from protein can be again dissolved, it must exist in a state of solution—that is, as gelatin—in the blood; and, if decomposed there by the alkali of that fluid, it produces (besides unknown extractive matters) gelatin-sugar, which can be decomposed into urea and sugar. The former is eliminated through the kidneys, while the latter may be employed in the body for purposes still unknown."

The uses of gelatin in relation to nutrition will be noticed in a future lecture.

Besides the gelatin of which we have been speaking, there is another kind, resembling it in many of its properties, but differing from it in composition, and in the source from which it is derived. It was first described by Müller under the name of *chondrin*. It is obtained from the permanent cartilages, the cornea, &c., by boiling them in water. When analysed by Mulder, it yielded—

Carbon	49.96
Hydrogen	6.63
Nitrogen	14.40
Oxygen	28.59
Sulphur	0.38

From which he calculated the formula $10(C_{92}H_{28}N_4O_{14}) + S$. When burned, it leaves about 4 per cent. of phosphate of lime.

An aqueous solution is precipitated by tannin, acetate of lead, and sulphate of iron; also by acetic acid and alum, which, however, must be added with care, since the

precipitate dissolves in an excess of these reagents. A concentrated solution gelatinises on cooling in the same manner as gelatin*.

From the existence of this second kind of gelatin we must infer that of another kind of tissue, the composition of which just as much resembles chondrin as the areolar tissue does the gelatin prepared from it. Thus, on analysing the cartilages of the ribs, Scherer obtained results almost identical with those which Mulder obtained on analysing the chondrin from these cartilages. Hence the chondrin-yielding tissues consist almost entirely of chondrin, as isinglass and others of the gelatinous tissues do of gelatin.

There are several points of interest connecting chondrin and gelatin. The bones of the fœtus at first contain chondrin; but as soon as ossification has commenced, they are converted into gelatinous tissue, and the ossifying cartilage, on ebullition, no longer yields chondrin, but gelatin. Again, the rib-cartilages of old animals, when these parts begin to ossify, no longer give chondrin on being boiled, but yield gelatin. Hence in some cases, and probably in all, chondrin is the primary, and gelatin the secondary product. It remains for us to ascertain how chondrin is changed into gelatin, and how gelatin is produced. "As to the latter point," says Mulder, "we observe two kinds of chondrin-tissue in the body: the one in the fœtus is converted into gelatin-tissue before birth (in the bones); the other preserves its existence for a number of years, and undergoes this change in very old age only. This is a remarkable difference, and cannot be explained chemically: it must depend upon the organisation."

Moreover, it is remarkable that the true gelatinous tissues do not all secrete calcareous salts, this property being possessed only by the gelatinous tissue of the bones and the true cartilaginous tissue (in old age). The skin and the serous membranes, which are also true gelatinous tissues, are destitute of that property. This is a difference that cannot be explained chemically, but that must be dependent on the property of the tissue.

"The formation of chondrin in young unossified bones we can attribute only to a protein compound; for in the chicken, whose tender bones contain chondrin, there are merely protein compounds and fats; and the latter have no part in the formation of chondrin. We may assume that, in the complete organism, chondrin is formed and

* It seems doubtful whether chondrin is a simple substance, because some reagents, as, for instance, bichloride of platinum, only partially precipitate it. When we reflect that it is obtained from the solution of the granular base of cartilage cells and their contents, it is easy to understand that it may be a mixed substance.

sustained by means of the same materials as in young animals. * * *

"As to the formation of gelatinous tissue from chondrin, it cannot be very different from the formation of the same tissue from protein compounds; for the skin and the serous membranes are directly produced from the latter, and not after a preceding formation of chondrin, as in the true cartilaginous tissue, and in that of the bones. This, however, cannot be explained by chemistry."

Extractive matters ought next to claim our attention. If we take any animal fluid and remove the protein compounds, salts, and other known compounds, there remains an amorphous mass of organic nitrogenous matter termed extractive matter. This may be separated into three distinct parts:—

a. That which is soluble in water, but not in dilute alcohol—*water extract*.

b. That which is soluble in water and in dilute alcohol, but not in anhydrous alcohol—*spirit extract*.

c. That which is soluble in water, in dilute and in anhydrous alcohol—*alcohol extract*.

These may be again subdivided in various ways; but for information on these points I must refer you to my Introduction to Simon's Animal Chemistry. I shall, however, take this opportunity of making you acquainted with several newly-discovered substances from the extractive matter of flesh. These are creatine, creatinine, sarcosine, and inosinic acid.

We commence with *creatine*, a substance first described in 1835 by Chevréul as an ingredient of the liquid obtained by boiling flesh with water. Berzelius tried in vain to find it; but Wöhler obtained it from the soup of 8lbs. of beef, and Schlossberger found it in the flesh of an alligator. With this preliminary knowledge of the substance, we proceed to give Liebig's best mode of extracting it.

Suppose that 10lbs. of flesh are to be operated on, the half of this quantity is finely minced and covered with 5lbs of water. The mixture is carefully kneaded with the hands, placed in a bag of coarse linen, and then compressed as strongly as possible by a powerful press. The compressed residue is a second time carefully kneaded with 5lbs. of water, and again pressed. The fluid of the first pressing is set aside for further operations, that of the second being used for the first extraction of the second half of the flesh mixed as before. In like manner the residue of the first half is a third time treated with 5lbs of water, and the expressed fluid serves for the second extraction of the second half, which is finally extracted a third time with 5lbs. of pure water, in which it is allowed to soften and again pressed out. The mixed fluids are strained, heated so as to coagulate the albumen and colouring matter, and again strained. The

resulting liquid is always acid, and does not become neutral when the blood which contains an alkali, on which its reaction depends, is added to, or mixed with it. On allowing this acid liquid to evaporate it becomes brown, and, after standing for a long time, deposits a few minute crystals of creatine. On removing the acid reaction, by the addition of a solution of baryta, there is a white precipitate of phosphate of baryta and phosphate of magnesia, unmixed with sulphates. After the separation of the precipitate the fluid is concentrated by evaporation, and if any films or membranes form on the surface they are to be removed. When it has been reduced to about the 20th of its original volume, and has acquired a thickish consistence, it is placed in a moderately warm situation and allowed to evaporate slowly. Very soon, small, distinct, short colourless needles appear on the surface, which increase on standing and on cooling, so that the walls of the vessel are gradually covered with them. These crystals are creatine.

The proportion of creatine in different kinds of flesh is very unequal. Of all kinds, the flesh of fowl and that of the martin contain the most, then that of the horse, the fox, the roe-deer, the red-deer, and the hare, the ox, pig, calf—and finally, that of fishes.

From 1000 parts of the flesh of fowl Liebig obtained 3.05 of creatine.

"	1000	the horse	0.72
"	1000	the ox	0.697

It has been found to be greater in wild than in confined animals, and its amount bears an inverse relation to that of fat.

The crystals of creatine are colourless, perfectly transparent, and of the highest lustre. They form groups, the character of which is exactly similar to that of sugar of lead. At 212° the crystals become dull and opaque, with loss of water.

Crystallised and anhydrous creatine is represented by the respective formulae

$C_8H_{11}N_3O_6$ and $C_8H_9N_3O_4$, which correspond with the numbers—

	Crystallised.	Anhydrous.
Carbon	32.22	36.64
Hydrogen	28.19	32.06
Nitrogen	7.38	6.87
Oxygen	32.21	24.43

Crystallised creatine contains the elements of 2 eq. of glycocoll, and 1 eq. of ammonia.

It dissolves easily in boiling water, slightly in water at the ordinary temperature (1 in 74), and is almost insoluble in cold alcohol. It is neither acid nor basic, but when heated with a mineral acid it is decomposed, and a new body—a true organic alkali is formed, to which Liebig has given the name of creatinine.

Creatinine thus obtained is in combination

with an acid from which it must be removed by the hydrated oxide of lead, or by carbonate of baryta.

The crystals of creatinine belong to the mono-clinometric system; they are much more soluble in cold water than those of creatine: 1000 parts of water at the ordinary temperature dissolving only 13.4 of the latter, and 87 of the former; and in hot water they are much more soluble.

Creatinine dissolves in boiling alcohol, and crystallises on cooling; 1000 parts of alcohol at the ordinary temperature dissolve 9.8 parts of creatinine, whereas they dissolve only 0.1 of creatine. It possesses all the characters of a powerful base, being able to expel ammonia.

Creatinine is represented by the formula $C_8H_7N_3O_2$, which corresponds with the numbers—

Carbon . . .	42.48
Hydrogen . . .	6.19
Nitrogen . . .	37.17
Oxygen . . .	14.16

On comparing the formulæ for creatine and creatinine we see that the latter may be regarded as formed by the removal of 4 eqs. of water from the former.

If we compare the formula of creatinine with that of caffeine it appears that—

Creatinine ($C_8H_7N_3O_2$) = caffeine ($C_8H_{10}N_4O_2$) + amide (NH_2).

Creatinine exists in the juice of flesh, and may easily be obtained from it by a method which I shall explain when speaking of the chemistry of muscle. I shall also shew you that creatine and creatinine exist in, and may be obtained from urine.

Having shewn you that creatine, when acted on by acids, yields a new base, creatinine, I now proceed to describe another new base—*sarcosine*, obtained by the action of an alkaline earth—baryta, on the same substance, creatine.

To a boiling saturated solution of creatine we add an amount of crystallised hydrate of baryta equal to ten times the weight of the creatine employed. By continued boiling the solution becomes turbid, and ammonia is disengaged. If the boiling be continued, baryta and water being added from time to time, until no further escape of ammonia is perceptible, there is obtained by filtration a transparent colourless liquid, containing caustic baryta, and the new organic base, *sarcosine*. After removing the baryta by a current of carbonic acid and subsequent ebullition, the *sarcosine* remains dissolved, and the solution, when evaporated, gives a syrup which, on standing, consolidates into a mass of broad, colourless, transparent plates. To exhibit it in a state of purity it is advisable to convert it into a sulphate, from which the base may be again obtained by means of carbonate of baryta.

The crystals of *sarcosine* are right rhombic prisms, acuminate on the ends by surfaces set perpendicular on the obtuser angles of the prism. They are colourless, perfectly transparent, and of considerable size; they are extremely soluble in water, but very sparingly so in alcohol.

The composition of *sarcosine* is represented by the formula $C_5H_7NO_4$, which corresponds with the numbers—

Carbon . . .	40.45
Hydrogen . . .	7.86
Nitrogen . . .	15.73
Oxygen . . .	35.96

The aqueous solution of *sarcosine* does not affect vegetable colours, but its combinations with acids sufficiently indicate its basic properties.

From the above formula we see that creatine contains the elements of *sarcosine* and urea; for—

Creatine ($C_8H_{11}N_3O_2$) = *sarcosine* ($C_5H_7NO_4$) + urea ($C_2H_4N_2O_2$).

There is no doubt that this equation is actually true, and does not, as is too often the case, represent a mere possibility; for Liebig has ascertained that a solution of urea in barytic water is resolved by long boiling into carbonate of baryta and ammonia, with the same appearances as those presented in obtaining *sarcosine*; and, further, that urea is present in the liquid if examined before the whole of the creatine is decomposed.

There is one more substance to which I shall call your attention this morning. It is an acid termed *inosinic acid*, obtained from the liquid of muscle after the deposition of the creatine in a crystalline form. After the solution has been further concentrated, and alcohol has been added till the whole becomes milky, it deposits, after standing for a few days, yellowish or white granular, foliated, or acicular crystals, of which the chief ingredient is the potash or baryta salt of *inosinic acid*. If the quantity of baryta added has been exactly sufficient to precipitate the whole of the phosphoric acid, the crystals contain *inosinate* of potash, but if the baryta has been added with excess they consist of *inosinate* of baryta, or a mixture of these two salts.

The solution of the acid prepared from these salts has a strong acid reaction, and possesses an agreeable taste of the juice of meat. When evaporated it yields a syrup, which, after weeks, exhibits no signs of crystallisation. From an analysis of the anhydrous *inosinate* of baryta, Liebig has determined its formulæ to be

$C_{10}H_7N_2O_{11}$ or $C_{10}H_8N_2O_{10} + HO$.

The hydrated *inosinic acid* contains the elements of acetic acid, oxalic acid, and urea.

1 eq. hydrated inosinic acid
 $(C_{10}H_7N_3O_{11}) = 1$ eq. acetic acid
 $(C_2H_3O_2) + 2$ eq. oxalic acid
 $(C_2O_4) + 1$ eq. urea $(C_2H_4N_2O_2)$.

In the preparation of the inosinates the temperature should not exceed 140° .

For a more complete account of creatine, creatinine, sarcosine, and inosinic acid, I must refer you to Liebig's "Researches on the Chemistry of Food."

A COURSE OF

LECTURES ON DENTAL PHYSIOLOGY AND SURGERY,

Delivered at the Middlesex Hospital School,

By JOHN TOMES, Esq.

Surgeon-Dentist to the Hospital.

LECTURE XIII.—concluded.

INFLAMMATION of the dental periosteum may, however, move more slowly through its various stages. The inflammatory action may last for some time before the supervention of suppuration, and, in the meanwhile, occasion violent intermittent attacks of pain, not confined to the tooth alone, but often extending to the face and head, in which situations the pain may be far more intolerable than in the tooth itself.

Only a few days since I removed a tooth, with the periosteum inflamed and thickened, which had tormented the patient almost night and day for a fortnight; yet there was no denudation of the fang, or formation of pus. In cases like this you will frequently find that dental exostosis has commenced on the surface covered by the inflamed tissue, slight in amount, perhaps, yet distinguishable.

In other cases, again, the separation of the inflamed tissue occurs only at the apex of the fang, through the canal of which the pus oozes; but the relief is then only partial, and the periosteum continues to thicken, and the alveolus to enlarge, to make way for the increase in size of the diseased organ. The pain is intermittent, and often simulates in its character *tic douloureux*. The specimen before you, and from which the figure was taken, caused, in conjunction with several teeth similarly affected, severe facial pain, which had lasted, on and off, for some months, till the patient was quite worn out, (fig. 44). The condition I have described is more frequently found in stumps than in teeth where the crown is but partially decayed; and it is common to find the fangs of several stumps in a similar state.

FIG. 44.



Fig. 44.—Inflammation and thickening of the fangs, without any disposition to gumboil. The pus in this case is secreted in small quantities, and escapes through the canals of the fangs. The points only of the fangs are denuded of periosteum.

The disease under consideration may assume yet another degree: it may begin so gradually, and advance towards suppuration so slowly and painlessly, that the patient is not aware of its existence till he discovers a tumor on the gum, or the abscess breaks; and afterwards, so little inconvenience is felt, that the occurrence is forgotten, till, from some cause or other, the aperture leading to the alveolus which contains the remnants of the disease becomes closed, when pus re-collects; and even then but little pain may attend the process. The pus is again liberated, and comfort is restored. Sooner or later, however, the inflammation becomes more severe, and the patient is obliged to seek a remedy in the removal of the tooth.

Cases of this passive character are sometimes productive of symptomatic pain, and should not, therefore, be lost sight of. The gum, too, over the affected alveolus, frequently becomes thickened, minutely nodulated on the surface, and assumes a mottled hue.

In any case where the inflammation is acute, and the system in an unfavourable state, the diseased action may, and often does, extend to the periosteum of the jaw, and, if not speedily subdued, occasions thickening of the bone, or, even worse, may cause necrosis of a considerable portion. I have known three-fourths of the under jaw lost from disease commencing in the dental periosteum of one tooth. In more favourable instances, the disease may creep on only to the adjoining teeth, occasion their loss, and then end. In the great majority of cases, however, the inflammation does not spread: the pus makes its way to the surface, and there is left a fistulous opening in the gum, with thickening of the surrounding parts. Enlargement of the alveolus in which the disease occurs is common to all

cases, the degree being proportioned to the extent of the disease.

Active inflammation of the dental periosteum may arise without our being able to trace the cause: the tooth, and the neighbouring parts, may be, so far as we can see, healthy. In nineteen cases out of twenty, however, it follows or results from, or is an extension of, inflammation of the dental pulp, or is consequent on necrosis of the whole or a part of the fang.

Treatment.—I told you in a previous lecture, that local bleeding is frequently ineffective in inflammation of the pulp: the reverse is the case where the dental periosteum is the seat of disease. Here it is our best remedy. If used sufficiently early in the disease, it seldom fails to produce relief, and frequently cuts short the disease. One or two leeches should be applied, by the help of a leech-tube, to the gum opposite the end of the root of the affected tooth, in connexion with which treatment an aperient should be taken. Care should be taken not to move the tooth by mastication or by other means.

The various toothache nostrums which I have mentioned, excepting only sialogogues, are utterly useless in the treatment of this disease. If, however, the inflammatory action has gone on for a day or two, it is probable that suppuration cannot be avoided, especially if the affection has spread to the gum. In that case, the tooth should be removed, and the gum, if there is reason to suspect that pus had made its way into it, should be freely incised.

Extraction of the tooth, however skilfully performed, is not always followed by cessation of pain; on the contrary, the degree of suffering is sometimes for a while increased, arising, no doubt, from the laceration of the inflamed tissues. The duration of the after-pain will be proportioned to the extent of the inflammation, and to the amount of sympathetic pain previously suffered.

In all cases of pain after extraction, the sufferer should be directed to hold hot and strong decoction of poppy heads in the mouth, and to renew the mouthful when it ceases to feel hot. This application should be continued till the pain abates, which will generally be, even in the worst cases, within an hour or two.

If from any cause the tooth may not be removed, we must then do what we can to relieve the pain, and to reduce the disease to a state of passive gum-boil. If there is reason to believe that pus has not been formed, a leech should be applied to the gum, and aperients given; but, should you find a circumscribed swelling in the gum over the tooth, it is pretty certain that pus is making its way outwards, and the part should be freely incised. By this means,

the escape of the pus is hastened, and consequently much pain saved. A small fistulous opening will remain for the exit of the pus, unless there be a way through the fang by which it may get free. It is quite possible that the coats of an abscess situated in the alveolus may embrace the necrosed extremity of the fang, and cease to secrete; in which case, the gum would perfectly heal, and the end of the tooth would be in a similar position to an encysted foreign body. But I do not think this is of common occurrence, neither could it be expected, when it is considered that the fangs of teeth admit, under pressure, of a slight degree of motion.

Chronic inflammation of the dental periosteum.—Under this head I include those cases in which there is no tendency to the formation of an abscess.

This form of disease may implicate the whole or only a portion of the investing membrane of the fangs.

If the whole periosteum be affected, the tooth becomes loose, the alveolus absorbed, and the edge of the gum inflamed. With this there is but little pain, unless the tooth be so situated that it is frequently pressed upon. The gum gradually sinks with the absorption of the alveolus, and the tooth drops out or is removed.

In some cases there will be a slight discharge of pus from the edge of the gum. By the process I have described, old people frequently lose their teeth. They will tell you their teeth are quite sound, but that they drop out one by one. If you examine the mouth of a patient so complaining you will probably find teeth in the state I have just noticed.

Any source of irritation to the gum, such as ligature round the neck of the tooth, or irritation of the periosteum by oblique pressure on the crown of the tooth in such a manner as to force it out of its place, will induce chronic inflammation of the dental periosteum even in young persons. The accumulation of tartar is also productive of this malady.

The treatment must consist of removal, if possible, of the exciting cause, scarification of the gums, and the local application of astringents and stimulants.

Tannin rubbed on the gums frequently does great good. The compound spirit of horseradish is both an agreeable and useful application in these cases, especially when the gum participates in the disease. In aged people treatment is but palliative; the disease goes on, the alveoli waste, and the tooth falls out. The gum then, and not till then, returns to a healthy state.

When a part only of the periosteum is affected, the disease presents quite a different aspect, and usually occurs in connection

with stumps; the crown of the tooth having been destroyed by caries. The periosteum about the extremity of the tooth become thickened and nodulated; the socket widens as the disease advances, until the neighbouring alveolus is laid open. With this state there is occasional and sometimes severe pain, not necessarily confined to the seat of the disease, often not in the affected alveolus at all, but in the jaw, or in the cheek-bone, or in the ear. The edge of the alveolus seldom becomes absorbed, so that the fang is held firmly in its place (fig. 45.)

FIG. 45.



Fig. 45.—A section of the front part of the lower jaw, shewing the manner in which the alveoli became enlarged, and their septa destroyed, in chronic inflammation of the dental periosteum.

When there are three crownless fangs in a row, and the periosteum of one only the subject of chronic inflammation about the end, it is extremely difficult, if not impossible, to tell which that one is, unless there is tenderness on pressure, or the margin of the gum is encircled with a red line, neither of which symptoms are constant.

This bulbous state of the dental membrane (often termed fungous) is occasionally found in connection with dental exostosis, and sometimes with necrosis, when the extent is very slight; but in the latter case, it is disposed to become active, and end in alveolar abscess.

There is but one method of treatment—the affected tooth should be removed.

Whenever you find a patient suffering pain in the jaw or face, or ear, and is unable to state the exact seat of pain, but is disposed to ascribe it to the teeth, you will do well to remove any stumps that are found in the mouth; for the periosteum of one or all may be thickened and diseased, and this you will not know till they are removed. Very generally the diseased tissue is more firmly connected to the tooth than to the alveolus, and is therefore drawn out with the tooth.

Rheumatic inflammation of the dental periosteum is occasionally met with in those who are suffering from a general attack of rheumatism, in which case all, or the majority of the teeth, become slightly loose and raised in their sockets, and, when

pressed on, give great pain. Astringent applications may be used, though local remedies will do but little good. It is by general treatment addressed to the primary disease that this state of the teeth will be cured, and this does not fall within the province of the dentist. You will find an account of the malady, and the treatment to be used for its cure, in Dr. Graves's clinical lectures.

A slight and transient attack of the condition in question is very common. The patient tells you he has caught cold in his teeth; the teeth feel slightly loose and painful, especially when firmly closed, but that the unpleasant sensation will go off in a day or two, as similar attacks have done before.

Inflammation of the dental periosteum is a constant attendant on salivation induced by mercury; and in this, as in all other cases produced by agents taken into the stomach, the effect is equal in the periosteum of all the teeth, and the whole periosteum of each tooth. The inflammation may end, if the cause be continued, in death of the part, but is seldom, I believe, productive of alveolar abscess. The gum partakes more or less in the disease and its consequences. If the condition be continued for any length of time, the alveolar process becomes more or less absorbed; and on the subsidence of the disease, the gums are found to have left the necks of the teeth uncovered.

After repeated and long-continued salivation, so much absorption of the alveoli takes place that the teeth drop out for want of support.

Dr. Watson, in his lectures, mentions the following substances as occasionally causing ptyalism. Preparations of gold, of copper, of antimony, and of arsenic; also castor oil, digitalis, iodide of potassium, and opium. The same condition is also sometimes produced by pregnancy. Dr. Hawkins mentioned to me one case, in which salivation and inflammation of the dental periosteum, and loosening of the teeth, arose from the frequent administration of small doses of croton oil; and another case, in which similar symptoms were induced by sponging the upper half of the body once a day for a fortnight with nitro-muriatic acid.

The cause of the disease having been discontinued, a stimulating wash should be used; and I learn from our apothecary, Mr. Corfe, that brandy and water is found to be one of the most efficient. Tannin applied to the gums is also very effective. Scarification should be avoided, as there is a predisposition to sloughing when the system is under the influence of mercury. The patient should be enjoined to move the mouth as little as possible, and especial care should be taken to keep the teeth at rest. Stri-

cleanliness of the teeth and mouth should, however, be observed; and the offensive odour and tastes, which usually accompany salivation, may, if oppressive, be in a measure subdued by combining a little chloride of lime with the stimulating wash.

Malignant disease sometimes commences in the dental periosteum, and from thence extends to the jaw. It cannot, however, I believe, be recognised at its commencement; and when it has advanced, and implicated the jaw, the case comes under the province of general surgery: hence, it would be out of place to enter into the history and treatment in these lectures.

Hæmorrhage from the dental periosteum.—It occasionally happens after the extraction of a tooth, that blood continues to flow from the wound till the life of the patient becomes endangered; and there are many cases on record where life has been lost from this cause.

Usually the bleeding ceases within a few minutes after the removal of the tooth, and the alveolus becomes plugged with coagulum. In hæmorrhage the coagulum forms, but blood oozes by the side. The cause of this state arises from a peculiar condition of the whole vascular system, which is termed the hæmorrhagic diathesis, or perhaps sometimes from the condition of the vessel of the part only. The patients themselves generally tell you that they are subject to bleeding from the nose, and that they have often the greatest difficulty in checking the flow of blood.

I have met with three cases of hæmorrhage from the alveolus within the last five years, and these have occurred recently.

The first was a lad of eighteen. I removed for him a second bicuspid of the upper jaw; two days afterwards he returned with a pale and wretched countenance, and said that the gum had bled at short intervals ever since the tooth was drawn. The alveolus was cleared of coagulum, and a piece of lint, tightly rolled into the shape and size of the root of the tooth, was loaded with eaf of the matico, reduced to powder, and introduced into the alveolus. The bleeding ceased within a few minutes, and did not again return.

The second case occurred in a female—a robust cook. A molar of the lower jaw was extracted; 36 hours afterwards she returned, and was evidently suffering from loss of blood. The gum, she stated, had bled ever since the tooth was drawn. A leaf of matico was softened and rolled up, with the under side outwards, and introduced into the bleeding socket, the coagulum having been previously cleared away. The hæmorrhage stopped within a few minutes. Three days afterwards the young woman's mistress wrote to say that the gum had not

since bled, but that her servant still felt very weak.

The third case occurred in a young man of five-and-twenty. He returned after the hæmorrhage had lasted only six hours. Similar treatment was adopted, and with the same favourable result.

Previous to the introduction of piper angustifolia matico by Dr. Jeffery, the common practice was to roll up a piece of lint, and, after saturating it with a strong styptic, such as the muriated tincture of iron, or a solution of nitrate of silver, to introduce it into the bleeding alveolus, there to be retained by a compress of lint pressed on the part by the closure of the jaws. The mouth is kept shut by a bandage passed under the chin and over the crown of the head. A narrow strip of lint, saturated with a styptic, and gradually introduced into the bleeding alveolus, is, in some cases, a more convenient manner of application than the rolled plug.

Dr. Reed, of Edinburgh, has invented an instrument, of which he has published an account, for producing pressure on the bleeding part in maxillary hæmorrhage.

Should the ordinary methods of treatment fail, the dentist may succeed in arresting the bleeding by making a plate of metal, or other unyielding material, to fit accurately the surface around the bleeding part, and then confining it either by compress or by ligature to the adjoining tooth or teeth. This will prevent the blood from escaping out of the alveolus. Such an apparatus must be specially constructed for the case, and might be made in one or in two hours at most. In great need, a piece of sealing-wax, moulded to the form when warm, might prove of great value.

Original Communications.

ON THE LYMPHATIC TUMOR IN THE FEMALE BREAST.

By JAMES MILMAN COLBY, M.D.

Physician to the Western Dispensary, and Senior Physician to the Royal Pimlico Dispensary and Lying-in Institution.

THE absorbent vessels on the upper part of the breast, leading to the axilla, are subject to a disease characterized by a painful, tender, and irritable swelling, consisting of several cord-like indurations, sometimes disposed in parallel rows, and at others connected after the manner of an anastomosis.

Other parts of the breast are occasionally the seat of this affection; and in whatever situation it occurs, the swelling is transverse, following the direction of the absorbents towards the axilla. On a superficial examination the tumor may escape detection, but it may always be discovered by taking the suspected part between the finger and thumb. When the pain and tenderness are extreme, the absorbent glands in the axilla, and, more rarely, below the clavicle, become enlarged from irritation: these glandular enlargements always disappear after the original disease has subsided. The lymphatic swelling in the breast also frequently retires, leaving no vestige behind it. In chronic cases, however, a permanent thickening takes place, occasioned by the deposit of lymph in the cellular membrane.

This disease usually attacks females between the ages of 15 and 35,* and is liable to recur repeatedly when the constitution is in the peculiar state predisposing to it. The condition to which I allude is that of comparative emaciation, accompanied with irregular or deficient menstruation, depression of spirits, and general debility; hence, suckling and chlorotic women are most frequently the subjects of the attack. In some rare instances, corpulent women are found to labour under the disease. Some patients are inclined to attribute the origin of the disease to external violence; in the majority of cases, however, if not in all, it has appeared to me to proceed from imperfect menstruation.

In one case I had an opportunity of examining the uterus of a patient suffering with this disease, when I found the posterior portion, adjoining the cervix, in a state of congestion, presenting to the fingers a doughy or anasarctous feeling; and in another case, which will be presently described, the disease was connected with a morbid condition of the mucous membrane of the uterus.

The size of the tumor in the mamma varies from that of an almond to that of a small adult thumb, and the pain and tenderness attending it are of a remittent character.

In one of these tumors, which was removed at the earnest solicitation of the patient, who had suffered severely from repeated attacks of the disease, I

found, on examination, a thickening of the coats of the lymphatic vessels, which were imbedded in a stratum of condensed cellular membrane.

The duration of this disease is uncertain: I have known it return repeatedly in the same individual during a period of ten years, and as repeatedly subside under proper treatment: in most cases, the swelling, pain, and tenderness, undergo an increase on the approach of menstruation.

When unrelieved, the lymphatic tumor in the breast sometimes terminates in small abscesses, leaving painful fistulous ulcerations, which are tedious and difficult to heal.

Diagnosis.—The discrimination of this disease from others resembling it is not difficult: from the chronic mammary tumor described by Sir A. P. Cooper,* it may be distinguished by the pain and extreme tenderness, by the vitiated state of the patient's health, by the absence of lobes and of any cyst, and by the disease generally invading the breasts of suckling women in preference to those of virgins. The condition of the uterus, too, is widely different: in the mammary tumor a state of uterine excitement prevails; in the lymphatic a deficient circulation takes place in the uterus, manifested by an imperfect secretion from its mucous surface. From the irritable tumor, and neuralgic state of the breast, this disease may be known by the transverse, parallel, or anastomosing cord-like bands, which are always present; by the remittent character of the pain and tenderness; and by the latter symptoms being confined, as far as regards the breast, to the immediate locality of the tumor. When the lymphatic tumor occurs in corpulent women, the difficulty of discovering the diseased mass, seated deeply beneath the adipose membrane, is considerable.

Treatment.—When the pain and tenderness are excessive, leeches and evaporating poultices may be applied to the integuments over the tumor. In general it will be found unnecessary to adopt any local remedies, as the pain is usually of the aching kind, like that accompanying rheumatism or phlegmasia dolens. The patient should take some preparation of iron twice daily, have the bowels relieved

* Illustrations of the Diseases of the Breast, Part I.

by an aloetic aperient, if needful, and be allowed a generous diet. Should suckling have been long-continued, or the patient have had many children, the infant should be weaned. Exercise in the open air should be enjoyed, and fatigue and mental uneasiness avoided. By attending to these directions the tumor will disappear in a few weeks, or all uneasiness be so far removed that the patient will feel no inconvenience from it, unless the constitutional and uterine derangement should recur. When abscess or ulceration takes place, the only local remedy necessary is an evaporating poultice, or lint or linen saturated with water and frequently renewed.

CASE I.—October 14th, 1815.—Miss W., æt. 24, of a melancholy temperament, has, during several years, experienced, at intervals, severe pain and tenderness in a tumor situated at the upper part of the breast. The tumor is about an inch and a half long, and half an inch wide, and is found on examination to consist of clusters of parallel absorbents, greatly thickened, and adhering to the adjacent cellular membrane, indicated by lymph deposited in consequence of the repeated attacks of vascular excitement. The tongue is furred; the epigastrium tender and painful; the appetite impaired; and the mind desponding and irritable.

I prescribed four leeches to the swelling in the breast, a blue pill every second night, and a mixture, twice a day, composed of infusion of senna and gentian.

28th.—The state of the stomach improved, and the tumor more free from pain and tenderness. An ounce of Mist. Ferri Comp. twice a-day.

Nov. 7.—The tumor entirely relieved with respect to pain and tenderness, but the permanent thickening of the parts composing the remaining portion of the tumor continues.

CASE II.—June 2nd, 1829.—Miss H., æt. 18, complains of a painful and irritable swelling in the upper part of the breast, towards the axilla, which she supposes proceeded from a blow received four years ago. The tumor, when taken between the finger and thumb, feels like a mass of hardened absorbents, disposed in rows like strings. The pain is of a rheumatic kind, and extends down the arm, and

is greatly increased by any manual examination; the tongue is furred, and the bowels costive. App. Hirudines, vj. et cataplasma evaporans; Capiat Pil. Hydrarg. gr. v. alt. noct. et Magn. Bicarb. gr. x. c. Magnes. Sulphatis, 3j. bis die.

21st.—Pain, tenderness, and swelling, much relieved, except during menstruation, which has lately been very irregular and deficient. Cap. Ferri Sulph. gr. ii. et Aloes, gr. j. bis die.

29th.—The tumor, pain, and soreness, completely removed; general health much improved.

CASE III.—A poor woman, mother of five children, has suffered, during one year, pain and tenderness, occasioned by a lymphatic tumor in the upper part of the breast; she is suckling an infant five months old. The swelling resembles a small bundle of cords, and has become more painful and sore than usual within the last two months; has not menstruated since her confinement; bowels costive. Capiat Ferri Sulph. gr. ii. et Aloes, gr. iss. bis quotidie. At the end of a few weeks the disease in the breast subsided.

Jan. 9th, 1832, the patient applied again for my advice, stating that she was suckling another child, six months old, and was again labouring under the pain in the breast; the swelling and induration were also beginning to return. The chalybeate medicine was repeated, and in the course of a few weeks all symptoms of the disease disappeared, notwithstanding she continued to suckle her child during the cure.

CASE IV.—Feb. 26th, 1831.—J. S., æt. 28, mother of two children, the youngest of whom is 7 years old, has complained several months of an aching pain and great tenderness in the upper part of the left breast. In the seat of the pain and soreness I discovered a congeries of thickened lymphatics; menses regular, but very deficient in quantity; costive. Capiat Ferri Sulph. gr. ii. bis die, cum Aloes soc. gr. j.

March 19th.—The lymphatic character of the swelling more distinct, the adjoining fulness from inflammation in the cellular membrane having disappeared.

26th.—A similar disease in the ab-

sorbents below the nipple; the original swelling much reduced.

April 9th.—Breast quite well; the menstrual discharge improved.

Oct. 22d.—The disease has returned to an increased extent; the breast is almost covered over with indurated lymphatics, resembling cords, passing towards the axilla. The patient states that the disease migrates from one breast to the other; menses very deficient. Rept. Ferri Sulph. et Aloe.

At the end of five weeks the disease was again removed, leaving no vestige behind it.

1833, Feb. 2.—Extreme pain and tenderness, without swelling, have again attacked the left breast. Menses again very deficient.—Rep. Ferri Sulph. et Aloe.

In the course of a few weeks the patient was again cured, the pain having entirely ceased.

1835, Nov. 3.—The tumor has returned, presenting the same symptoms as at first; menses regular, but defective.—Rep. Medicamenta.

17th.—All the symptoms relieved. The lymphatics, on examination, more distinct, and feeling in some parts as if distended. The disease is chiefly seated near the upper margin of the breast.—Rep. Med.

By a continuance of the medicines about two months, every symptom of the complaint was removed.

CASE V.—Eliz. Smith. Complains of a painful lymphatic tumor, of the size of an almond, in one of her breasts, seated near the axilla. The menses were deficient.—Cap. Ferri Sulph. gr. ij. et Aloes, gr. j. bis die.

Sept. 12.—The tumor continues painful, and, examined between the finger and thumb, it appears to be composed of swollen and indurated lymphatics running in a direction parallel with each other.

Nov. 4.—Disease has entirely disappeared.

CASE VI.—S. D., æt. 30, has a swelling in the left breast, extending like a cord from the sternal to the axillary side. Three glands as large as peas are observable in the axilla. The tumor is tender and painful, especially on the approach of menstruation.—Capiat Ferri Sulph. gr. ij. bis die.

26th.—Pain in the breast nearly gone; the transverse cord scarcely

perceptible, and all the enlarged glands, except one, much reduced. The soreness in the breast and glands has greatly subsided.

31st.—Cured.

CASE VII.—A corpulent lady, æt. 43, consulted me respecting a tumor in the right breast, which had existed about two years. She complained of a remitting and aching pain in the swelling, and the nipple was retracted. She had been under the care of a general practitioner and an eminent surgeon in the country, but could obtain no relief. On examining the tumor carefully, I discovered an irregularity, which proceeded from a congeries of absorbents passing in parallel lines in a transverse direction. The examination was accompanied with tenderness at the time, but this subsided after the pressure was removed. Every fourth month a quantity of coagulated blood was discharged from the congested vessels of the mucous membrane of the uterus. In the meantime no menses appeared. The absorbent vessels and glands in the axilla were unaffected. Complexion sallow.—Cap. Ferri Sul. gr. ij. bis die.

May 5th.—The proper menstrual discharge returned. Tumor much smaller and easier, and a division was found in it, one half being firm, and the other resembling the ordinary mammary lymphatic swelling. General health and complexion improved.

12th.—Swelling rapidly diminishing, and all pain gone. Cont. Fer. Sul.

Aug. 18th.—The swelling has lost all hardness, has nearly disappeared, and is free from pain, except just before menstruation commences.—Cont. Med.

1839, July 6.—The patient again consulted me, complaining of a rheumatic disease affecting the muscles of the shoulder and chest. I found the absorbent vessels of the breast a little enlarged and indurated, but quite free from pain and tenderness.

CASE VIII.—M. B., mother of several children, one of whom she had been suckling several months, was admitted under my care a patient in the Western Dispensary. When admitted, she complained of almost constant aching pain proceeding from several hard cord-like tumors, situated near the nipple, in a state of inflammation. One of these tumors had suppurated and burst, and

had left a fistulous opening, which discharged purulent matter. I directed her to apply evaporating poultices to the painful and inflamed parts.

Dec. 14th.—Finding the pain unmitigated, and the fistulous opening without improvement, I prescribed sulphate of iron, in the dose of two grains night and morning, and the poultices to be continued.

21st.—The fistulous opening healed, and the tumors almost free from pain.—Cont. Fer. Sul.

28th.—Pain quite gone, and the tumors greatly reduced in size; general health and appearance wonderfully improved.

1847, Jan. 7.—The swelling and pain perfectly removed, and all vestiges of the abscess and fistulous opening have disappeared. The patient is becoming lusty.—Cont. Fer. Sul.

A short time afterwards this patient was discharged, without any local or general disease.

47, Chester Square,
Aug. 30, 1847.

THE CASE OF THE DUKE OF FRASLIN.

ACCORDING to an account published in the last number of the *Gazette Médicale* (4 Septembre), the following symptoms were observed:—Incessant vomiting and purging, commencing on Wednesday evening, and continuing during the whole of that night; lividity of the face; an icy-coldness of the extremities; thready pulse; suppression of urine; no pain in the stomach or intestines; great prostration of strength, but the mental faculties preserved.

The absence of pain is the most remarkable feature in the case: but it is well known that anomalies of this kind have been frequently observed, and there was quite enough to raise at least a suspicion of the cause of the symptoms. The writer of the article asserts that arsenic is only absorbed *twelve hours* after it has been taken into the stomach! Death from arsenic is undoubtedly due to the absorption of the poison, and it would be easy to produce a large number of cases in which persons have died from this poison within a much shorter period than twelve hours, and it has been detected in the viscera after death!

There is a very important omission in the description of the symptoms: it is not stated whether the evacuations were or were not of a *bilious* character.

ON SOME POINTS IN THE PATHOLOGY AND TREATMENT OF TUBERCLE OF THE LUNGS.

By WILLIAM HERRIES MADDEN, M.D.
Physician to the Torbay Dispensary, Torquay,
Devon.

[Continued from p. 267.]

It will be noticed that, throughout this paper, I have used the words tubercular and scrofulous diathesis as interchangeable terms, believing that the two diseases are, in their nature, identical. This has certainly been, and probably still is, the generally received opinion; but there have not been wanting names of note among the opponents of the doctrine, and, very recently, Mr. Phillips has come forward as the avowed champion of their discrepancies. The work in which his sentiments are promulgated is one of such value and importance as to claim imperatively the most attentive consideration; and though his arguments have altogether failed to produce conviction in my mind of the soundness of his views on this point, I feel that they cannot, in justice, be passed lightly by, with the simple verdict "not proven."

Mr. Phillips acknowledges that there are no appreciable differences between scrofulous and tuberculous matter, so far as their physical and chemical characters are concerned; but he lays little stress upon this confessed fact. To me it appears all-important. We have a peculiar condition of body, giving rise to a peculiar product in the lungs; we have, even according to Mr. Phillips, a similar general condition, giving rise to a deposit in the subcutaneous glands, which to all our senses, aided by the best appliances, appears precisely the same as the former. The two constitutions are closely analogous;—the two products are so like as to be indistinguishable one from the other. Have we not in this good *a priori* grounds for the opinion that both evidence the existence of the same disease? The tubercle, be it observed, is not the disease any more than the scrofulous matter,—they are effects—consequents; and a sound philosophy appears to me

to demand that when we find two effects, two consequents, so precisely alike that we can by no means detect discrepancies, we should attribute them to the same causes—the same antecedents. At the very least, the grounds on which we come to the opposite conclusion should be most strong to warrant such departure from ordinary principles of reasoning: we shall see immediately whether those on which Mr. Phillips rests have this stable character.

The first argument brought forward is the difference in the condition of the parts, prior to the deposition of the morbid product. In the subcutaneous glands, inflammation always precedes the appearance of the scrofulous matter, while in the lungs tubercle is most generally formed without any such preliminary proceeding. Mr. Phillips acknowledges that pneumonia may give origin to phthisis, but contends that this is not the only cause, nor the most usual one; and that, "in the absence of other causes, inflammatory action does not seem capable of generating tubercular matter." In reference to this last assertion, I would merely remark, that it applies to scrofulous no less than to tuberculous deposits; in neither case can simple inflammation produce the observed results; there must be a fore-existing predisposition. But granting that the other facts are as stated, and I am by no means inclined to maintain the negative, what do they prove?—That one particular organ will take on a special diseased action, only when its functional energies are exalted or perverted by the inflammatory process, while another, always more active in its vital workings, does not require this additional stimulus. Thus much they teach us, and nothing more. Illustrations of analogous facts might be readily gleaned from many other departments of the pathological field.

To the alleged differences in the vascularity of the two products, we need not refer, for this plain reason—that a correct acquaintance with the essential constituents of both will shew us that they are alike *extra-vascular*. We come, therefore, to a consideration of the circumstances under which the morbid substances in question are deposited.

Here Mr. Phillips's arguments rest

entirely upon certain statistical data; and, before noticing them more in detail, I may be allowed to make one preliminary observation, and direct the attention of my readers to a fundamental fallacy, which, to my mind, vitiates all the conclusions he has laboured to draw from them. Mr. Phillips limits the application of the term *scrofula* to that form of disease in which the subcutaneous glands are affected. In many parts of his work he is compelled to use the term in a more extended sense; but the entire argument of the chapter we are examining depends upon its employment in this very restricted meaning.

Now it would be all very well if every practitioner who has contributed to the returns of the Registrar-General had been made to look through Mr. Phillips's eyes; but, as such is not the case, and as, most assuredly, the vast majority of the profession are in the habit of employing the word to designate a class of diseases, rather than one special manifestation, it appears to me that the number of deaths from *scrofula* noted in these tables represents the mortality occurring under the larger, not the limited, application, and that the returns are consequently useless for the purpose which they have been made to serve. Indeed, I very much doubt whether any example of death from *scrofula*, of which the diseased cervical glands was the only sign, has ever been observed; and, if other affections are included, then the definition fails, and with it the entire argument; for in the returns the state of these glands is passed by without special notice.

But to proceed. It appears that the mortality is greatest from *scrofula* before puberty, and from phthisis after: that *scrofula* finds most of its victims among males, and phthisis among females. Do these facts prove an essential difference between the two diseases? Are they not susceptible of a most easy explanation, on the supposition of the identity of the maladies? We know well that the localization of cancer is greatly influenced by age: we know that some parts of the body are more frequently affected in the male, and others in the female: that the lips, the stomach, the liver, are destroyed by its ravages most commonly in the former; while, as regards

the genital organs, the returns shew an enormously preponderating majority against the latter. But no one has ever attempted to argue that *therefore* the diseases, though similar, are not identical; and yet I verily believe as good a case might be made out for the one as for the other of these propositions.

The varied external circumstances in which individuals are placed at different periods of their lives,—the peculiar morbid influences to which they are exposed,—and the special modifications of functional activity and organic development which belong to the two sexes, are, I apprehend, quite sufficient to account for the observed discrepancies. And the same explanation applies, and with equal force, to the relative geographic distribution of scrofula and phthisis;—the one or the other form of disease is most prevalent in certain countries, or in certain districts of the same country, as a consequence of peculiar exciting or predisposing circumstances.

Take, by way of example, two children of the same family, both inheriting from their parents a radically defective constitution. The one, a boy, is sent to school, and engages with his companions in all manner of athletic exercises. He receives an injury upon his knee, inflammation follows, and the latent disease thus roused into activity becomes fully developed, and he sinks exhausted by the discharges, and the constitutional irritation from his scrofulous joint. The other, a girl, is not exposed to the same sources of danger, but, confined much to the house, in the acquisition of, so-called, necessary accomplishments, and exposed to the sudden alternations of temperature unavoidable in following out the amusements of fashionable life,—her lungs, ill-defended, because she does not wear sufficient warm clothing, become at last affected, and she dies of phthisis. Is not the disease identical in both, though its manifestations are different?

I have, at this present moment, a young lady under my care, who lost an elder sister from pulmonary consumption. She has the cicatrices of scrofulous abscesses on her neck, is affected with hip disease, and has manifested a variety of other symptoms of the strumous diathesis. A

brother, exposed to peculiar local influences in a warm climate, was the subject of ulceration at the back of the throat, and caries of the turbinated bones of the nose, *not* the result of syphilis, but evidently of the general constitutional disease received from his progenitors, which was thus called into action, because the appropriate stimulus was applied. Is it possible to deny the identity here?

Another argument, pointing in the same direction, may be drawn from the nature of the acknowledged causes. In both, hereditary transmission is the principal channel of disease,—the children suffer because their parents were not healthy. But both may be called into being by the same external agencies, as deficient food and clothing,—damp, unwholesome, and ill-ventilated dwellings,—without previously existing contamination. Subject children to such deteriorating influences as these, and one or other of the results we are considering will, in many cases, follow; but which I believe no man could affirm.

It appears to me, therefore, most consistent with a sound and rational pathology,—most in accordance with the general rules that guide us in our reasonings upon morbid actions, and most conducive to clear views and precision of practice,—to regard scrofulous affections of external parts, and tuberculous disease of the lungs, as separate manifestations of the one same constitutional taint, originating in the same defect of organic elements and vital energies, and to be guarded against, or treated when existing, by the same means.

What, then, are those means? In other words, What should be the prophylactic, and what the curative, treatment of these very common and fearfully destructive affections?

I cannot profess to enter fully into this very large subject;—a volume, rather than the concluding paragraphs of a communication of this kind, would be requisite for such purpose. I must content myself, for the most part, with generalities, merely dwelling more particularly on one or two remedies, to which attention has been recently much directed.

The disease being, as we have seen, essentially constitutional, dependent upon a general and most extensive

ritiation of the solids and fluids of the animal body, it appears, at once, abundantly evident, that our treatment, to be effective, must be directed to the removal, or, at least, the modification of this abnormal condition. Local appliances may be needed to combat local injuries, but the practitioner must ever bear in view the improvement of his patient's constitution at large. And, as one of the most efficient means, good, nourishing, easily digestible food, in sufficient quantity, is imperatively demanded, for without this our best efforts will prove abortive. And if at any time this be requisite, it is most especially necessary in youth, when the whole energies of the system are directed to the development of the various organs of the body, and when there is, consequently, a peculiar want of healthy and completely elaborated blood. A regular supply of free, pure air, is scarcely less important; nor must the influence of light be overlooked, — its absence, which experiment has shown to be so injurious to the growth of plants, is to the full as hurtful to the animal creation. Conjoined with these, the strictest attention should be paid to the state of the secretions and excretions, and whenever they appear to be in any way disordered by defect, or excess, or altered qualities, this condition should claim immediate notice, that, the cause being discovered, right remedies may be applied, and the ill effects prevented or removed.

Measures such as these, varied from time to time, as occasion may require, but steadily and systematically employed, with a full perception of the end to be attained, and a constant undeviating aiming at that end, will often prove effectual, and the evil day be averted or postponed. But, unhappily, they too often fail; the natural proclivity to disease is too strong for our restraining appliances, and the lungs show symptoms of disease. Our treatment must now be modified by the peculiarities of each case.

If the disease assume the inflammatory form, the means to be employed must be such as are calculated to reduce that state, and bring back the parts to their natural quiescence; we must act upon strictly antiphlogistic principles. But in doing this we are encompassed by many difficulties.

Heroic activity may bring about the very evils we dread, by irretrievably crushing the vital energies; too great timidity may leave the morbid processes to run their course unchecked and fatally. It requires a nice hand to hold the helm steadily, and avoid Charybdis while steering clear of Scylla. It is evident that inflammation must be subdued, but it is equally evident that the safety of our patient depends upon our not depressing him more than is absolutely necessary. He has a constitution naturally weak, and now more than ever susceptible of debilitating influences. If we lower him beyond a certain point, there will be no strength to rally; and though the activity of the diseased action may be checked, we shall only exchange it for an equally dangerous and chronic form. I should, therefore, be very cautious in the employment of general blood-letting, opening a vein only when such a measure appeared absolutely unavoidable; and by no means carrying the evacuation to such lengths as might be warrantable in other subjects. In my own practice, local depletion, blisters, and antimony, or mercury*, as occasion might demand, have been the means most generally employed, and with most satisfaction. I feel confident that more mischief has been done by too great activity than by undue supineness, though both are injurious alike to the sufferer himself and to the credit of his physician.

But this is not the only nor yet the most common aspect under which phthisis presents itself to our notice. It appears far more usually as an insidious, lurking enemy, that invades the strongholds of life with little warning of its formidable presence. The patient grows thin, he does not know why; he is incapable of exertions which were formerly so easily performed as to be unnoticed; or his breath fails him when walking up rising ground; or he is troubled with a short, dry, hacking cough, of which he cannot get rid. And all this has come insensibly on, or he refers to a cold which never fairly left him.

* I should give mercury to affect the mouth only in cases of pneumonia, occurring in a scrofulous subject, and therefore liable to run into tubercular disease. In pure acute phthisis there seems great danger in such a line of treatment.

Many cases of this kind furnish no decisive information upon physical examination of the chest, the tubercles being too few in number, too small, or too widely disseminated, to interfere materially with the normal characters of either the stroke- or the breath-sound. They are essentially latent as far as our perceptions are concerned, and the causes of the effects we see must be arrived at by a mental process, and by that alone.

In other cases, again, we have the invaluable aid of cognisable signs—comparative dullness over some part of the lung; harsh, or deficient, or irregular respiration; abnormal resonance of voice, or undue prolongation of the expiratory sound—all evidencing the same fact, that the organs we are examining are not throughout of their proper spongy permeable character. But even here the *general* symptoms are of the most vital importance; for the stethoscope, while telling us these physical truths, leaves untold what the special cause of this unnatural state may be. I am the more anxious to impress this upon my readers, because I feel confident that more discredit has been thrown upon this priceless aid to diagnosis by the dogmatism of untutored enthusiasts, than by all the opposition of the most blinded sceptics; that the real enemies of auscultation are the men who reject the consideration of everything which is not to be revealed by the object of their worship.

[To be continued].

THE SCOTCH EPIDEMIC FEVER OF 1843-4.

By JOHN RICHARD WARDELL, M.D. Ed.

Late President of the Royal Physical and
Hunterian Medical Societies,
Edinburgh; &c. &c.

[Continued, from page 203.]

5thly, **THE TREATMENT.**—Numerous as have been the doctrines from time to time advanced relative to the true nature of febrile diseases, such have scarcely been more various and opposite than the modes of treatment recommended. According to the particular pathological theories entertained are in some degree determined the kind of remedial agents to be employed, and

thus it is that philosophical inquirers who have differed in their opinions respecting the ultimate nature of the disease, have been led to the adoption of curative measures which in their nature and action are highly opposed; and hence have been espoused two principal modes of cure, which, though modified according to the suitableness of existent circumstances, are the cardinal means whereby the affection is treated, viz. the depletive and stimulative methods. It is the want of decisive proof, and the need of demonstrative facts, which prevent the establishment of an unequivocal line of practice; and so long as the ambiguity that obscures the radical pathology exists, will there be the propounders of novel notions, and fresh examples of practice occasionally entertained in the *ratio medendi*. One physician will affirm that the prostration is wholly dependent upon local congestion, and consequently impairment of the function of some organ or organs—especially those termed vital, and hence has recourse to the lancet. Dr. Armstrong in the early part of his life was an urgent supporter of this theory, and his boldness in the vindication of it won for its zealous advocate the highest professional renown; but time, however, frequently the gradual but true exposé of human fallacies, dispelled the illusion, and at the latter end of his practice he became as imbecile in his treatment of fever, as he had before been daring and energetic. Another will say that the prostration is produced by some occult impression made upon the nervous system—that the loss of equilibrium in the circulation is owing to the impairment of nervous power, and that unless nature be assisted in her conflict with the morbid agent, there would be a danger of her failing in the strife—therefore wine is liberally prescribed; a third, whose numerical recoveries are perhaps well nigh as great, pursues a middle course, or it may be observes a plan which from its simplicity and apparent inefficacy seems quite incapable of making any decided influence upon the progress of the malady. These statements, although they appear to reflect discredit upon the art, and shew our notions respecting the real nature of the affection not to be precise and conclusive, are nevertheless true, as must be conceded by all those whose

opportunities in the treatment of fever, and acquaintance with its literature, have been sufficient to enable them to judge. It must be remembered, however, that all writers of eminence are liable to cling to entertained hypotheses, and are seldom altogether unbiassed in their statements, so that some slight deductions should be made for partiality and preconceived opinion, and it may fairly be concluded that a rational treatment of fever, when founded upon the true principles of science and extensive experience, can do much in conducting the malady to a successful termination. To pertinaciously adhere to any particular form, is false reasoning, nor in anywise based upon philosophical inference, because it often becomes absolutely necessary to modify our measures according to exceptional circumstances and unforeseen exigencies. Mere practical men and symptomatic treaters err by not anticipating the changes in the train of events which we know from previous observation are liable to follow, whilst the unpractised theorist is too often disappointed by his hypothetical notions being refuted by demonstrative facts. If these days of fashion and fancy in the cure of diseases have given to the world systems, which, arguing from all hitherto formed ideas and experience, appear but incongruous vagaries, their very refutation, and the discussion to which they have immediately and indirectly given rise, have certainly had the happy effect of incontrovertibly proving that we have with too much prejudice been wedded to long-received notions—notions which are sweepingly embraced, not from conviction of their truth, so much as from the warrant of precedence and the recommendation of ancient usage: such have also exemplified, that too implicit reliance has in recent times been placed upon the virtues of medicines alone, and not sufficient importance ascribed to regimenal rules—that active interference is not only often of no avail, but positively injurious—that the power of hope and confidence are not a little beneficial—and that the unaided efforts of nature can of themselves frequently work out their salutary operations. In so far, then, the innovations which an age avaricious of novelty has admitted, have been of some service in bidding us to impartially enquire; and thus it may be, that the pro-

mulgation of error may have with it even elicited some issues of truth. Whatever may be the physician be deemed the most approved general principle of practice, every case, from the idiosyncrasies of the patient, the kind of complication and its degree of intensity, the previous state of health and habits of the individual, the external influences to which he is exposed, together with other considerations, must indicate certain other modifications in the remedies administered, whilst that nice discrimination in the detection of local affections when in their incipient state is of essential importance. When inflammatory complications arise they must of course be treated upon those general and acknowledged principles pursued in phlegmasial diseases, but always at the least possible expenditure of vital power; for it must ever be borne in mind that the system has to contend with a primary depressing influence arising from the noxious agent which it has contracted, since the abstraction of blood should never be carried beyond what is absolutely requisite, and such remedies as are likely to supply the place of bloodletting should sedulously be employed. On the continent, and especially in Italy, the emetic tartar has with this view been much extolled. During the stage of high vascular excitement there can be no doubt of its often being highly serviceable, yet in my own humble opinion there are certain disadvantages connected with this drug which forbid its very general exhibition: as in the very young; in those far advanced in life; where the type of the fever inclines to the adynamic form; where the vascular excitement is not very marked, &c., and also on account of its proneness to excite irritation in the digestive mucous surface, and thus laying the foundation of ulcerative lesion, a condition so frequently present in typhus. In many instances, however, this remedy along with others may avert the necessity for active depletion. It has before been stated that two epidemics are never observed exactly alike, and it may also be added that visitations occurring even but a very short time of each other may be of very dissimilar types, or even in the same locality simultaneously exist which are manifestly different in their nature, as exemplified in the fact of the seven days' fever and the ordinary typhus,

being present in various parts of Scotland at one period. Hence, there being such differences in the nature of febrile attacks, it is conclusive that the treatment found highly serviceable in one form might in another be far less successful, and thus it becomes manifestly important to carefully study the particular characteristics of the disease, ascertaining by cautious measures what remedies are effective or hurtful. Sydenham and the older authors were fully impressed with this truth, and paid the greatest attention to what they termed the *juvantia* and *ludentia*. There is no dispute that the fevers common to the British Islands have during the last thirty years become altered in their type,—that is, they are now of a less sthenic and more of the asthenic nature,—consequently demanding a line of treatment inclining more to the stimulative than the depletive order. Perhaps this change is more obvious in urban communities than in the rural districts, owing to the more numerous debilitating causes in the former than in the latter, which of course would generate, in the class of individuals amongst which the fever spread, a proclivity to the adynamic character. It is always expedient to narrowly watch the progress of the disease, guarding against unlooked-for symptoms, and rendering assistance to the efforts of nature when she seems unequal to the task, when we become decided in what such efforts consist, for when once the disease has fairly commenced we cannot hope to cure, although we may guide it.* The Cullenian aphorism to obviate the tendency to death† is an axiom ever to be remembered, and all our views have reference to that great truth which science and right reasoning have established: so that, in the language of Tacitus, it might be said

“Ad utilitatem vite omnia concilia nostra dirigenda sunt.”

The patients on admission, if not too far advanced in the disease, or when there were positive contra-indications, were ordered a warm bath, which had the two-fold advantage of tending to restore the cutaneous circulation and rendering the patient clean and com-

fortable; nor was the latter of slight importance, seeing that a great majority of the patients were from the most squalid and filthy parts of the city, with whom personal cleanliness was very imperfectly observed.

a. *Bloodletting*.—It is evident from the ancient writers, that the abstraction of blood in febrile diseases has been practised from the remotest antiquity, and on the revival of letters this remedy was employed according to the views of the ancients, to whose opinions the physicians of the middle ages looked with implicit belief, and regarded with reverential respect. The older authors considered bloodletting of utility in subduing the tumultuous action of the circulation, and thus arresting an undue determination to the vital organs. The philosophic minds of Sydenham, Hoffman, and Boerhaave, shewed that the timidity of their predecessors, who were less bold in their practice, was unfounded, and advocated a more extensive use of the lancet. The Cullenians, basing their practice upon a theory different to that of Sydenham and his disciples, did not carry out blood-letting in the same heroic manner, but used it more in the spirit of the Ovidian maxim, “in medio tutissimus ibis”; they bled, but with greater caution, and the notions of Gillkrest since his time have had an influence in modifying the practice; he stoutly insisted upon the mischief which might be done by injudiciously abstracting blood in fever, and strongly impressed the consideration of debility and putridity. Huxham and Pringle also advocated the same, and the opinion of a peculiar debility, which was long after entertained, undoubtedly imbued the mind of Cullen with that doctrine which has ever since exerted no slight influence on the treatment of this affection. From the time of that great systematic writer, amongst the warmest advocates of blood-letting have been Armstrong, Clutterbuck, and Welsh. That its proper employment in particular types and under certain circumstances is of inestimable benefit none can dispute, and that its indiscriminate use has produced more disastrous results than any other remedy in fever, must at once be acknowledged. It sometimes happens that the physician meets with cases beset with perplexing difficulties, and where the

* Pitcairn.

† Cullen's First Lines, vol. i.

most deliberate and nicest judgment are demanded—when excitement is passing on into debility, when determinations of blood in the vital organs are producing additional prostration, in advanced age, in the very young,—where there has been other disease, the previous habits of intemperance, &c.: it is in such instances where correct reasoning is of paramount importance, and where precipitancy of action and imprudent boldness are as liable to lead into error as to conduct to success. To moderate excessive vascular action is undoubtedly correct; it often happens, however, that this stage has passed its acme before the physician is called in, and sometimes the excitement of the circulation is never very marked. During the state of high vascular action, we may bleed to a far greater extent than before or after such state, periods when it would be attended with less benefit if not with positive harm. When the action of the heart is quick and forcible, the skin hot, eyes suffused, breathing full and deep, excretions suppressed and animal functions uninterrupted, we may with advantage bleed, for it is in this stage blood by being sent to the visceral organs, founds the commencement of positive lesion; hence the best time for abstracting blood is at an earlier part of the disease, as the prevention of complication is more under our power than its cure. The want of a proper consideration of this fact has led to the grossest errors, and those who bleed at all times during the fever are ever unsuccessful in their practice. If good be done by means of the lancet, one or two bleedings will generally suffice. Hildebrand recommends moderate venesections and repeated; but at the outset of the affection, when the pulse is full and strong, it is decidedly better to make an impression upon the heart's action, and subsequently use the other auxiliaries in subduing the pulse. When the epidemic is particularly prone to give rise to inflammatory complications, general depletions can be employed more energetically, and it has been from the success which has followed free bloodlettings in the sthenic type that physicians have been led to overrate the efficacy of the measure: here, as intimated, it is always desirable to pay much attention to the nature of the

prevailing distemper. Large bloodlettings have by some been recommended solely with the view to abruptly check the fever in its course, before the reaction has fully and fairly become developed. This cutting short of the disease is very questionable*; we are aware, however, that by making a powerful effect upon the pulse a copious perspiration will sometimes succeed, the bowels and kidneys be acted upon, and thus after such excretions have become excessive, the patient will sometimes at once be restored to health,—as if nature had become relieved, and the noxious agent expelled or rendered inert by such increase of excretional action. Speaking from personal experience I have great reason to believe that such does occasionally occur. When physicians' resident assistant in the Edinburgh hospitals, it is my firm conviction that once, if not twice, the fever was averted in my own person by the induction of a very powerful diaphoresis before the reactive stage commenced, and as soon as the initiatory symptoms of chilliness and languor were experienced. Such instances were very rare, and I do not remember any case, where spontaneous reaction had taken place, of the disease being arrested in its course. This tumult of the circulation appears to multiply and develop the noxious agent in the blood, and to convey it with greater force and frequency through every tissue of the body. The effect which the abstraction of blood has in fever is sometimes marked, and continues (especially when the secretions are increased), but, on the other hand, it is often of brief duration, and when a large bleeding has been employed it is no uncommon thing for the heart's action to re-assume its former power and quickness in a short time,—a fact not uncommonly witnessed in the seven days' fever; if, on the contrary, a high and bounding pulse has been subdued, and does not regain its wonted height, we may conclude that the treatment was indicated, and especially when from being quick, sharp, and strong, it becomes softer, slower, and fuller; with such a change as this the skin will be more moist, the tongue less dry, nor the thirst so ur-

* Copland expresses the same opinion.

gent. It has already been stated that the pulse in the seven days' fever would assume a degree of frequency so high, without there being any apprehensions of danger, which rendered this one of the many distinguishing peculiarities of the distemper, nor was blood-letting in any particular manner employed on account of such excessive vascular action; experience in the disease proving that this unwonted impetuosity in the circulation did not, as might have been anticipated, commensurately give rise to organic lesion,—another fact impressing us with the desirableness of studying the particular type; and not only should attention be paid to the nature of the fever, it is repeated, but also the individuals under our care. The lower orders of the inhabitants of large cities are far more liable than the inhabitants of the rural districts to present the adynamic form—and hence the treatment varies. In the Edinburgh hospitals, as may be seen from the tables which have been given, a great majority of the patients were from the wynds, closes, and pent-up streets in the Old Town and Leith; the emaciated and pale-faced denizens inhabiting which places are of too squalid and over attenuated frames to indicate energetic depletive measures. When the fever is of the inflammatory kind, even such individuals will bear more abstraction of blood than might be supposed. Country patients, from living in a purer air, being better fed, less given to intemperance, and other excesses, their more plethoric and fibrous habits, better constitutions, &c. are far more eligible for blood-letting; a truth generally acknowledged, and which my own opportunities of observation have supplied abundant proofs. The most important questions respecting blood-letting in this disease are manifestly these:—viz. does the debility, so distinguishing a feature in fever, proceed primarily from excess of action in the circulating system, and such excess of action give rise to congestion and inflammation in certain of the vital organs, and thus affect the organic nervous influence proper to such organs; or, is it dependent upon some remoter and more occult effect produced in the solids, from a preceding depressive influence exerted on the nervous system? would lessening the current

of the circulation always tend to avert the evils of local determinations? how long may recourse to the lancet be had after the vascular excitement has reached its maximum? and what are the decisive symptoms and conditions which lead us to rely upon other expedients, and constitute the preludes to more manifest indications of graver changes? These points are not satisfactorily established. If the proneness to local engorgement were solely owing to excited vascular action, the abstraction of blood ought then to be marked by more of that certainty and success which follows its employment in the phlegmasiæ. It seems pretty evident that, although an overloaded state of the visceral organs must necessarily contribute very materially to the general debility, yet another and primary cause is that of a morbid impression being made upon the brain, spinal marrow, and organic nerves,—a doctrine which, in our practice, should never be overlooked. It must hence appear undeniable that much caution should ever be given to the employment of this remedy in fever, more especially when had recourse to at an advanced stage of the disease, for if improperly and adventurously used, the most serious results may accrue, whilst, on the other hand, a remedy so potent and often efficacious where it is indicated should be ever employed, so that it might be said in the words of Lucretius,—

*Judicio perpende, et si tibi vera videtur
Dede manus; aut si falsa est accingere contra.*

[To be continued.]

EFFLUVIA TRAP.

A PATENT has lately been taken out for an apparatus, which is stated to be capable of entirely preventing the escape of noxious effluvia from drains, &c. Its advantages, as represented by Mr. Walker, the patentee, are, that its action cannot be affected by stones or rubbish passing through the grating; that it can scarcely be put out of repair, and that it cannot be stopped by ice. It is also extremely simple in its construction, and by no means expensive. The Commissioners of Sewers of the City of London have caused several of these apparatuses to be put down in various parts of the metropolis.

MEDICAL GAZETTE.

FRIDAY, SEPT. 10, 1847.

WE inserted in a recent number* of this journal, a letter from a General Practitioner, containing a very reasonable suggestion respecting the institution of honorary degrees in medicine. The writer, a medical practitioner of forty years' standing, represents himself as desirous of taking a higher status in the profession; but he finds that he is completely debarred by the regulations of the Royal College of Physicians. He feels what every man in his position would naturally feel, that he cannot again go to school and submit to an examination with the chance of not succeeding,—a risk which most men who had been long engaged in successful practice, would certainly hesitate to encounter. We are no advocates for lowering the position of the College of Physicians, or for making admission into the Licentiate'ship too easy; but it does appear to us that there is here an opening by which one of the grievances of which the profession has long complained, might be removed with credit and honour to the College. The former exclusiveness of this Institution led to the general introduction of foreign degrees, and drove to one or other of the numerous small Scotch or Continental Universities, those English medical practitioners who desired to append to their names, the title of Doctor of Medicine. Hence the confusion that has arisen, and the difficulty which still exists, of suppressing the sale of foreign diplomas. There is no want of a precedent for the adoption of the plan here suggested. The University of New York is in the habit of confer-

ring the honorary degree of Doctor of Medicine annually on four individuals residing within the State, who are of mature age and of good local reputation as practitioners. This is both a reasonable and a just provision; for what can be more preposterous than the plan of placing on the same footing, two individuals,—one who is a complete novice in the profession, and another who has grown grey in the practice of it! Even the appointed examiners may have been in their pupillage, when the experienced claimant was the possessor of a diploma! We do not know that we can more strongly put the case than in the words of the correspondent who has addressed us on this subject. "Surely a general practitioner who has been engaged for thirty years in combating disease, who has met in consultation with numbers of the most eminent and popular physicians, who has maintained a good character with his medical brethren residing in his immediate neighbourhood, and who has acquired a certain property the result of his successful labours, would make as good a practical physician, as though he possessed all the literature of the schools."

But it may be said, the Royal College of Physicians has made a distinction between the novice of 26 and the practitioner of 60. Let us consider in what this difference consists, and whether it meets the case before us. The Regulations inform us that—

"Candidates who have already been engaged in practice, and have attained the age of forty years, but have not passed through the complete course of study above described, may be *admitted to examination* upon presenting to the Censor's Board such testimonials of character, general and professional, as shall be satisfactory to the College."

There are three examinations through which the candidate must pass; and these are held at separate meetings of

* Aug. 20, p. 349.

the Censor's Board. The *visé voce* part of each is carried on in Latin, except when the Board deems it expedient to put questions in English, and permits answers to be returned in the same language. Thus, then, it will be perceived the only concession made to veteran practitioners is, that they *may be admitted to examination!* The fact of their having been engaged in practice, and attained the age of forty years, merely renders it unnecessary for them to produce *all* the certificates which would be required of the younger candidates. Such a rule is couched in the most exclusive spirit; and we do not hesitate to say, that it justifies the loud complaints which have been made against the College. Let us put the case, that a man commences general practice with the diploma of the Royal College of Surgeons and the certificate of the Apothecaries' Society,—that he has devoted thirty or forty years to the exercise of his profession,—that he has always maintained an upright character, and has deservedly attained in public opinion, a degree of success which many Licentiates of the College of Physicians might envy; or that, in addition to long and successful practice, he has contributed largely and usefully to the literature of his profession:—he is desirous of acquiring the title of Doctor of Medicine, and, on application at the College, is informed that if he will bring satisfactory testimonials of character, general and professional, and will undergo three separate examinations on Anatomy and Physiology, the Physical Sciences, Diseases and their treatment, he may possibly, according to the judgment of the Censor's Board, have the diploma conferred on him! Is it to be expected that a man so situated, will again go through the routine of study at the hospitals, or be ground for an examination? And can an examination furnish any better test

of professional ability, than his meritoriously acquired position in public and professional estimation? Such questions need no answer from us; and it is certainly any thing but creditable to the Royal College of Physicians, that it should thus arrogantly exclude from its degrees, men who are in every sense deserving of the title of Doctor of Medicine!

The College takes credit to itself that it has broken through the barrier of University privilege, and that it now admits, as licentiates by examination, all those who have had the advantage of a liberal education, both general and professional, and can prove their qualifications by adducing proper testimonials. The question, however, is,—Why should such individuals have ever been excluded from examination?—We think it would be difficult to supply a reasonable or justifiable answer. We know of none except that which is based on the assumption that no one could, by any possibility, be qualified to become a *physician* unless he had had a University education! We cannot say that the terms of self-approval, in which this change in the mode of electing licentiates has been announced by the College, are at all justified by the circumstances. These restrictive regulations had been retained too long; and it is this which has led to the inundation of the profession with sham diplomas from a number of petty Universities, and the creation of illegal Doctors of Medicine *usque ad nauseam*. It is now difficult, if not impossible, to distinguish the real from the spurious possessor of the title. In reference to this alteration of electing licentiates who proved themselves to be men of ability, although they had not breathed the air of a University, the College states, that "it has endeavoured, fairly, to look at that which

is *substantial* rather than at that which is *nominal* in all that concerns the qualifications of its members. It has resolved to estimate all testimonials, whether presented as certificates, diplomas, or degrees, strictly with reference to their value, and to measure them by this standard alone, as parts of the previous qualifications of candidates, which are to be verified in their examinations." We are perfectly at a loss to reconcile this statement with the mode of dealing with practitioners above 40 years of age. If a man has notoriously obtained a good status in his profession,—is it not a preference of the *nominal* to the *substantial*, to compel him to go through an examination like one who is only about to commence practice? In our view it is a complete abandonment of what is substantial, in order to maintain a technical system of exclusiveness.

The examination adopted towards candidates who have already been engaged in practice, is either a mere form, or it is carried out in the same spirit as with respect to novices. The regulations would lead us to adopt the latter conclusion: common sense, the former. If the examination be formal, no evil, but, on the contrary, much good, would result from its immediate abolition. Veteran practitioners, as the regulations at present stand, are led to suppose that they must go again to school and get up their anatomy and physiology, &c. There are many reasons why this plan cannot be carried out; and we know of no valid reason why one who has spent the greater part of his life in practice, is to have the rudiments ground into him, and then to be told that the examination is a mere form. If, however, the same course be pursued towards the student of twenty-six and the practitioner of forty or fifty, then it follows that the College

really prefers the shadow to the substance!

The adoption of some such rule as that suggested of admitting annually to the honorary degree of Doctor of Medicine, a certain number of general practitioners who have, by their age, standing, respectability, and reputation, deservedly acquired a right to the title, would undoubtedly tend to create a favourable feeling in the profession towards the Royal College of Physicians. As the Fellows are chosen without additional examination from the body of licentiates, so would we advise that the ranks of the licentiates should be annually recruited by an election of a certain number of those who constitute the class of surgeons and general practitioners. If such a power cannot be exercised under the present charter, there would, we think, be no difficulty in procuring a supplemental charter to carry out the principle.

We have hitherto abstained from making any observations on this remarkable case, as the medical reports, which have successively appeared in the daily journals, were conflicting and often absurdly inconsistent. As to the Duchess, it was reported that she had been literally hacked to pieces: it now turns out, from an accurate investigation of the particulars, that not one of the numerous wounds on her person was, in itself, of a serious nature,—no important vessel had been divided—and the heart and all the organs necessary to life, had escaped injury. The facts show that a struggle, of at least half an hour's duration, had taken place; and that her death was entirely due to the hæmorrhage that took place from the numerous superficial vessels which had been divided.

With respect to the Duke, it was alleged

that he had swallowed at one time laudanum; at another, arsenic; and then a mixture of the two poisons. It was contended that he had taken a large dose of arsenic *before* he was placed under arrest—that no symptoms of poisoning by this substance were manifested until the day before his death—*i. e.*, six days after he was arrested—that it required several days for arsenic to become absorbed into the liver, &c. All these stories appear to have been concocted, in order to exculpate on the one hand the medical attendants, and on the other the officers of police. The Report of the President of the Court of Peers has shown that, owing to the culpable negligence of the police, the dress which the Duke put on after he was placed under arrest, was not searched; and there can be no doubt that there was concealed in it a packet of arsenic. There is no reason to believe that laudanum was swallowed at any time; but a dose of arsenic was taken on the evening of Wednesday the 18th—a clear proof that the Duke could not have been properly watched by those about him.

The medical part of the case is also extraordinary:—there were well-marked symptoms of alvine irritation on the night of Wednesday, and during the whole of Thursday;—if these were not directly indicative of irritant poisoning, they were certainly such as to create strong suspicion—especially in the circumstances under which the Duke was placed. The family physician who was called in on Thursday mistook the symptoms for an attack of cholera!*

On Friday there was a remission, and the patient was then seen for the first time by M. Andral. It was not until the evening of Saturday, when the symptoms recurred, that M. Andral and the other physicians in attendance, satisfied themselves that the Duke was

labouring under the effects of irritant poison. On Sunday, an analysis of the evacuations was made for the first time by M. Chevallier; and it was then found that those passed on Thursday, during the supposed attack of cholera, contained a large quantity of arsenic! The Duke, it is well known, died on Tuesday, the 24th of August, and the inspection of the body confirmed the opinion so tardily formed.

The medical points of interest about the case are—1st, that there should have been, for about twenty-four hours, such a complete remission of symptoms as to have deceived so experienced a man as M. Andral; 2nd, the importance of making an analysis of the evacuations, as, had M. Chevallier been consulted, he could have satisfactorily explained the cause of the illness on the Thursday; 3rd, the protracted nature of the case, *i. e.*, that under a large dose, the individual should not have died until after the lapse of six days.

It is obvious that the Duke must have swallowed the poison in the presence of those who declared that their eyes were constantly upon him! This disposes of the Police part of the question. In reference to the medical attendant of the Duke, he was not only entirely wrong in his diagnosis, but he took no pains to set himself right. He called no experienced man in consultation, but allowed the President of the Court of Peers to seek the advice of M. Andral. On the part taken by this distinguished physician, we are unwilling, without further information, to make any critical remarks; but it does appear to us most extraordinary that a medical opinion of the probable cause of the symptoms, could not have been formed by him; because, although there was a remission when he was first consulted, yet he had for his guidance the *previous* sudden and violent illness without any apparent na-

* For an account of the symptoms in the case of the Duke, see p. 458.

tural cause ! As a scientific man, too, he must have known the importance of making an analysis of the evacuations to aid the diagnosis of a doubtful case. This was wholly neglected ; and it was left for the President of the Court of Peers, a non-professional man, to order on his own responsibility this very important part of the investigation only on the *fifth day* after the poison had been swallowed !

A French contemporary* insinuates that the poison was swallowed with the knowledge of Dr. Rouget, one of the medical attendants of the Duke. This gentleman has refused to give any explanation of the facts which became known to him during his professional attendance ; and on this ground it is strongly suspected that he knows more than he is willing to admit.

It may appear easy to lay down rules after the occurrence of events ; but it must be remembered that the facts connected with this eventful tragedy, were of a very peculiar kind. There was nothing extraordinary in supposing that the Duke would destroy himself by poison, if he could only obtain access to the means ; and a report was circulated in Paris soon after the murder of his wife, that he would commit suicide ; yet, in the face of these strong probabilities of his taking poison, his illness was referred to an attack of cholera ! Without pretending to affirm that there was any connivance in the death of the Duke among those who were placed officially around him, we can come to no other conclusion than that there was the most culpable negligence and indifference. If an act like this could be so easily perpetrated by a great criminal, it most assuredly reflects disgrace upon those who had him in their custody.*

* *L'Union Médicale*, 31 Aout, 1847.

Reviews.

Remarks on Vivisection, and on certain Allegations as to its Utility and Necessity in the Study and Application of Physiology. Published by the desire of some Medical and other Supporters of the Royal Society for the Prevention of Cruelty to Animals. By GEORGE MACILWAIN, Esq., F.R.C.S. 8vo. pp. 27. London: Hatchard and Son, and Calder. 1847.

We have never lost an opportunity of expressing our sense of the cruelty and inutility of frequent operations upon living animals, as adopted by those who have made vivisection the principal means of physiological inquiry. In a vast majority of instances, the wantonly barbarous experiments of the ultra-upholders of this system have proved either utterly useless, vexatiously fallacious, or absolutely dangerous in the erroneousness of the conclusions to which they have led, when taken as guides to treatment. It is probable that there is not any point whatever of mere physiological interest, which the investigator is justified in attempting to resolve by mutilating the frame of a creature endowed with sensations as vivid as his own. And it is now well understood that, even in testing the effects of poisons, remedies, and operations,—owing to the peculiar idiosyncrasies of the lower animals, to say nothing of the difference in their formation,—the results of these measures upon their systems cannot with any degree of certainty be received as precise indications of the effects of similar agencies upon the human organism. Still we do conceive that, wherever it appears to be by any means probable that a question involving the life or the health of human beings can be decided only at the expense of a series of severe experiments upon the lower animals, no philanthropist would for a moment hesitate to sanction the adoption of such a course ; in such instances the experimenter can only be exposed to blame when he either conducts his operations with unnecessary cruelty, or multiplies them to a useless extent.

The "Remarks" of Mr. Macilwain,

on this subject, are, upon the whole, highly judicious. He has not, however, entered fully into the discussion of the question; his observations appear to be little more than a sketch of the views which he entertains, or they may perhaps be intended as a prelude to a more lengthy disquisition. The author here confines himself to the consideration of certain experiments by Hunter, Orfila, Sir A. Cooper, and Sir Charles Bell, which have been brought forward in support of the necessity and utility of vivisection, but which he denies to have been productive of any tangible advantage. The only portion of this essay with which we feel disposed to find fault, is that in which the author contradicts the well-known opinions entertained by Sir A. Cooper, with reference to the impossibility of the occurrence of bony union in cases of intra-capsular fracture of the cervix femoris, and condemns in terms of unqualified disapproval the plan of treatment which those opinions indicated. Upon these points we cannot accord with the views of Mr. Macilwain; but as we have neither time, space, nor inclination to revive the discussion of this ancient "bone of contention" at present, we shall rest satisfied with entering our protest, and directing the attention of our surgical readers to the author's remarks.

We are happy to find an experienced surgeon arraying himself in the ranks of the humane opponents of vivisection injudiciously employed; we believe that the system is now very rarely had recourse to by medical men in this country, under circumstances where its adoption could be considered as otherwise than absolutely justifiable; but it is still absolutely necessary that the profession should decide how far this measure may be carried as an aid to scientific investigation; and that the public should be convinced that physiologists and surgeons apply it solely to the investigation of questions which involve the physical welfare of the human race.

The Norfolk Miscellany of Literature, Science, and Agriculture. No. 1. Norwich: Jarrold. April 1847.

THE conductors of this periodical have evidently commenced their labours with a strong determination to exert

their utmost influence and their strongest arguments in putting down the sway of empiricism in the county of Norfolk, a district which we fear is somewhat unusually afflicted with this great moral delusion and physical pest. The number contains two very sensible articles on this subject. The following brief detail, extracted from the "Observations on an Extraordinary Inquest," will shew how deplorably unenlightened the worthy inhabitants of Norfolk are upon this extremely grave subject. It appears that, in January last, a schoolmaster, named Juby, residing in the village of Honing, fell under the treatment of one of the fraternity of quacks that infest the neighbourhood, that certain medicines were prescribed, and that he died shortly after. At the suggestion of the coroner, the medicines were sent to a surgeon to be analysed. This gentleman, on being asked what was the nature of the disease, or cause of the death of the deceased, replied he could not tell, as he had not been consulted by the deceased during his illness, but believed the medicines prescribed were harmless, — would neither kill nor cure. These observations caused an advertising letter to appear in the provincial papers from a Thomas Staples, Practical Student in Diseases, Medicine, and Chemistry, and likewise a student in Physical Astrology. This person, it is stated, professes to be enabled to tell the nature and treatment of disease without seeing the afflicted, or asking a single question. He laid claim to this power at a former inquest held over the body of one Myhill, who died shortly after taking his medicine. In reply to the question—What disease did Myhill die of? Staples said, had he been asked within three days after his decease, he could have told them, but the star that gave him the information had passed by. The medicine, in this instance, had been analysed by Mr. Clowes, Surgeon, Stalham, and found to contain ammonia, which the man "who studies the stars" utterly denied on oath, but he afterwards admitted that he did not recollect what the mixture contained. In both cases a verdict of natural death was recorded, but the actual cause was not mentioned. The deceased, Juby, is stated to have suffered

from irritability of the bladder; the medicines furnished by Staples for the alleviation of this malady (in addition to ordering a bullock's milt to the feet), consisted of two varieties—the one, spirits of turpentine and balsam of copaiba; the other contained a quantity of laudanum; other stimulants, such as brandy, rum, &c., were ordered to be taken. Each time the first variety of medicine was swallowed, it produced pain across the loins, "with a sensation (to use his own expression) 'blown up,'" which the medicines containing the laudanum, taken in brandy and water at bed-time, partially relieved. Two doses of each were taken; little or no sleep was obtained; the expression "the complaint has flown upwards" escaped from the lips of the dying man, and delirium closed the scene.

In after ages, the perusal of such details as the above, will go far to deprive us of our much-vaunted claim to supreme national enlightenment. The consideration of such circumstances must irresistibly lead to the conviction that the people among whom these events occurred were sunk in the lowest depths of ignorance and superstition, that the laws by which they were protected were weak and inefficient, and that their law officer were incapable and remiss in the execution of their duties.

Correspondence.

POISONING BY DRUGGISTS.

SIR,—Should the following case of poisoning (showing the great necessity for some reformation among the druggists,) be worthy of consideration, you will oblige me by giving it a place in your valuable journal.

On Saturday morning (August 28th), I was summoned to attend immediately a Mrs. B., who had by the gross negligence of a druggist (or I should have said the druggist's mother, an old woman, knowing one bottle from another only by its size and general appearance) taken 3vi. of laudanum instead of three-pennyworth of tincture of rhubarb, for which Mrs. B. herself had asked. Mrs. B. fortunately recognised the mistake instantly, and proper treatment having been adopted she has entirely recovered. The greatest negligence of the druggist perhaps depends on his having had the laudanum in a bottle labelled *Tinct. Digitalis*, and not *Tinct. Opii*.

The druggists in this neighbourhood (at least the majority) and I believe it is the same all over Liverpool, are in the habit of not only prescribing over their counters, but actually having the audacity and assurance to pay daily visits; and immediately they feel any danger, a medical man is instantly sent for, in order that a certificate of death may at once be obtained, in case the person dies, and so avoiding an investigation. I myself have had occasion to make notice of such practice to the registrar of this district, and I certainly think it the duty of every medical man to endeavour to suppress such quackery and gross imposition upon the credulous.

Yours respectfully,

ALFRED STEPHENS, Surgeon.

3, Upper Hill Street, Toxteth Park,
Liverpool.

THE NATIONAL MEDICAL INSTITUTE.

Quocumque verum.

SIR,—Dr. Shearman and I have an understanding that in discussing a public subject on which we differ in opinion, and in separating truth from error or sound from partial judgment, we can avail ourselves of the same extent of liberty of speech as that which is claimed by senators or barristers, without the least interference with the good feelings which exists between ourselves.

As it is always desirable that every party in discussing a subject should make correct assertions; and as numerous misstatements have appeared at different times in the medical journals, which have produced wrong impressions, and have given such erroneous views as to involve the subject of medical politics in mystery, I need not make any further apology for commenting upon a letter which you inserted in your number of May 21st, page 921, containing a statement respecting the Council of the National Medical Institute.

That council, as a body, have not noticed any groundless effusions; (the consequences have been, that numbers of the profession have been misinformed upon various points); but as the letter in question emanated from the Manager of the Provincial Medical and Surgical Association, and was sent to three medical journals, it was considered by my constituents (although it was in my estimation harmless) to require a refutation, and on that account it was refuted in *the organ of the writer's own Association*, (number of June 16th). Dr. Shearman, of Rotherham, is a member of the Council of the Provincial Medical and Surgical Association, one professed object (the 5th) of which Association is,—"to establish among its members the harmony and good feeling which ought ever to characterise a liberal profession;" and presuming that he wished his practice to accord with his professions as a councillor,

and his example with the precepts which he inculcates to the members, as well as to promote the objects of his Association, and feeling doubtful whether his letter, (in the *MEDICAL GAZETTE* of May 21st, the *Lancet* of May 15th, and the *Provincial Journal* of May 19th) was written in ignorance or by design, my reply was framed so as to ascertain that fact; by which I found that, so far from the misrepresentation having been withdrawn, it was repeated (in the number for July 14th).

As a correspondence in each journal was needless, it was determined that a brief recapitulation of it only should be given in other journals; and as our letters have not been published so often as monthly, a great length of time has passed away without our having brought the correspondence to a conclusion; nevertheless I presume that when you have published a charge against a party, you do not refuse a reply to it.

The chief object in answering Dr. Shearman's letter is (by shewing that all unfair accusations, or digressions from a subject, lead to much unnecessary and useless writing and printing) to endeavour to keep respectable correspondents, in future, to correct statements, and to the elucidation rather than to the mystifying of the subject of medical politics.

My answer to his charges was as follows:—

"The Doctor says, in his first four reasons, that the intended legalization of medical men (not qualified for general practice according to the present law) by the Council of the Institute and by Mr. Wakley's Bill, are the same in effect; whereas, the Doctor knows as well as they do (because they have so often told him) that the Council would legalize such medical men *in the first instance only* to prevent retrospective legislation."

The misrepresentation was repeated in comparing the Council of the Institute to "The Dog in the Manger," although the Council's legalization would be *but on one occasion*, before raising the standard of education; and although the effect of the Medical Registration Bill, would be quite the contrary—as they are *two very different plans*. The charge of *hypocrisy on our part* is entirely groundless; and it does not follow that because we differ in opinion from Dr. Shearman, we must necessarily be wrong.

At all events your correspondent's assertions are neither proofs nor arguments; he says "that we who differ from him in opinion do not think rightly."—I am, sir,

Yours very truly,

W. ALLISON,
Hon. Local Secretary to the National
Medical Institute.

East Retford.

Medical Intelligence.

ETHER VAPOUR APPLIED BY A BLADDER AND SPONGE.

A SPONGE has been recommended as the best and most simple method of applying ether-vapour by inhalation. M. Munaret employs a bladder, the aperture in which is made sufficiently large to be adapted to the face, and to cover the mouth and nose. A flexible iron (or copper) wire is secured to the margin so as to allow of its enlargement or contraction, according to circumstances; and to prevent injury to the lips, the edge is surrounded with several layers of cotton or velvet. This apparatus may be secured to the face, if necessary, by a ligature. M. Munaret then pours the ether into the bladder just before inhalation. This plan of administering the vapour by a bladder presents no novelty to English readers, since it was suggested many months since. The combination of the two plans might, however, prove more effectual than the use of either separately. Thus the sponge or a mass of fine cotton-wadding might be saturated with ether, and introduced into the bladder. The flexibility of the mouth-piece, formed of wire, would render it easy to enlarge, and admit air when required, while the bladder would prevent the loss of ether-vapour.

QUEEN'S COLLEGE BIRMINGHAM.

THE annual meeting of the friends of Queen's College, in this town, was held August 25th, at the College. Lord Lyttelton, the Principal of the College, presided; and there were also present the Hon. and Rev. G. M. Yorke, C. N. Newdegate, Esq. M.P., J. E. Piercy Esq., George Attwood, Esq., Rev. G. S. Bull, Rev. J. Allport, Mr. E. T. Cox, Mr. E. Armfield, Dr. James Johnstone, Dr. Birt Davies, Aldermen Van Wart and Room, Mr. W. H. Osborn, Professors Knowles, Shaw, &c. The proceedings were opened by the Chairman calling on Mr. W. S. Cox, the Dean of Faculty, to read the report, which was as follows:—

In making their twenty-first report, the Council rejoice to state that the past year has been distinguished by the steady progress of your institution in a degree which its most sanguine friends could scarcely have anticipated.

The number of students registered as studying at Queen's College within the period comprised between the first of October, 1846, and the present date, is fifty-two. The number of students registered as being in attendance on the medical classes of the senior department is thirty-nine, and of the stu-

dents in attendance on the classes of the junior department is thirteen. Thirty-two students have in the above period attended the medical and surgical practice of the Queen's Hospital, and seven at the General Hospital. Of the students in the senior department, nineteen have been in residence within the walls of the College, nine have been residing with medical practitioners in or near Birmingham, three have been living with their parents or guardians, five have been in lodgings, one at the General Hospital. The number of students entered to the junior department, and in residence with the college tutors, has been eight, and the non-resident students in the same department five.

The first important question which came under the consideration of your Council was the following communication addressed to the Dean of the Faculty, by the Registrar of the University of London :—

"Notice having been given by a member of the Senate of the University of his intention to submit for the consideration of the Senate the following propositions :—

"That all candidates for the B.A. degree shall be examined either in one of the Books of the Pentateuch in the original Hebrew, or in one of the Four Gospels, or the Acts of the Apostles, in the original Greek; and also in Scripture History.

"That with regard to this examination, the following regulations be adopted :—

"1.—That a board of examiners in these subjects be constituted, to consist of not fewer than five persons.

"2.—That the examination be conducted wholly on paper.

"3.—That all passages and questions proposed for the examination of the candidates be submitted to the whole board of examiners; and that no passage or question be determined on unless it have received the sanction of a majority of at least four out of five of them.

"4.—That none of the questions fixed upon be of a doctrinal character; and that no question be so put as to require an expression of religious belief on the part of any candidate.

"5.—That a printed paper be placed before each candidate, having on *one* side the passages selected from the *Hebrew* text, with questions relating to the Old Testament only; and on the *other*, passages selected from the *Greek* text, with questions relating to the New as well as the Old Testament; and that a candidate, without being asked any *visé* *voce* question on the subject, be allowed to choose whichever side of the paper he may think proper.

"6.—That no answer or translation given by any candidate be objected to on the ground

of its expressing any peculiarity of doctrinal views, provided always that it be decorous in tone and language.

"7.—That no candidate be declared not to have passed except with the consent of at least four out of five of the examiners.

"The opinion of the constituted authorities of Queen's College is requested thereupon."

After mature deliberation, the following reply from your Principal was unanimously approved and adopted :—

"Hagley, March 6th, 1847.

"SIR,—Your communication to William Sands Cox, Esq. Dean of the Faculty of Queen's College, Birmingham, of date November 11th, 1846, on the subject of certain propositions relating to a proposed examination in scriptural subjects, through which all candidates for the B.A. degree in the University of London should pass, upon which the opinion of the authorities of Queen's College was requested, came before the Council this morning, and I am empowered, as Principal of the College, to send to you the following reply to that communication. I regret that by some mistake it was not brought before the Council at an earlier period.

"The essential principle of the constitution of Queen's College, in so far as it bears upon the present question, is, that the students who are admitted within its walls for the purpose of receiving classical, mathematical, and professional instruction, shall also receive religious instruction, and be subjected to religious discipline according to the principles of the Church of England. This last provision, however, may be taken rather as what appeared to the Council to be the necessary mode of giving effect to a general principle, than in itself, constituting such a general and fundamental principle. That general principle, then, is this; that the religious character is essential to the very idea of a complete education, or rather to education itself when rightly understood. Assuming therefore this principle, to which the Council considers itself pledged by the constitution of their College; looking at the expressed intention of the charter of the University of London, of securing a regular and liberal course of education for the students for whom it provides degrees; and considering the present state and practice of the University of London in this respect, the Council of Queen's College feel that they cannot do otherwise than recognise in the projected regulations an improvement upon that state and practice.

"At the same time, while the Council feel unable to give any opinion whether there may not be circumstances attending the

position and constitution of the University which render any further movement in the direction of the proposed change impossible, they feel bound, in accordance with the constitution of their own College, to state that they can only look on the regulations, as presenting an imperfect approximation to what they consider essential to a course of regular and liberal education.

"I have the honour to be, &c.

"LYTTELTON.

"R. W. Rothman, Esq. Registrar."

Your Council have since learned that the proposed regulations were not submitted to the Senate of the University.

The Hon. and Rev. G. M. YORKE, in moving the adoption of the report, congratulated the meeting on the very satisfactory nature of its contents and of the proceedings of the year. He referred with particular pleasure to the able manner in which the principles of the College had been laid down by their noble Principal. This was one of the many attempts which had been made and had failed to introduce a theological examination into the London University; but he hoped that the object would be ultimately attained. After passing a high eulogium on the exertions of the officers, the speaker concluded by moving the adoption of the report.

Mr. NEWDEGATE, in seconding the motion, apologised for having been unable to attend the meeting of the Council. He was gratified by the assertion of religious principles in the letter of the noble Principal, since it was of the highest importance that religious training should be *ab initio*. Should the after-training depart from this rule, the benefit of the early instruction would remain. The tone given to the pupils of an institution at the commencement of their study marked the character of both the institution and its pupils, whether for good or evil, (*Applause*).

Thanks were then voted to the officers, on the motion of Mr. Geo. Attwood, and seconded by Mr. Piercy.

The office-bearers having been re-elected, it was resolved that the meeting do adjourn to the 4th of October, to assemble then for the distribution of prizes.

Mr. NEWDEGATE having taken the chair, thanks were then voted to Lord Lyttelton, for his watchful care and kind attention to the interests of the institution, and for his conduct in the chair that day.

In acknowledging the vote, Lord LYTTELTON remarked that he hoped all then present would be also present on the day to which they had adjourned the meeting. As the distribution of prizes was the most important occasion in connection with the College: he should defer till then the remarks which

he proposed to make on the position of the College, its progress during the past year, and its prospects. The meeting then broke up.

MEDICAL PLURALISTS.

PLURALISM prevails in the medical as well as in other professions. It is stated that there is a physician in Paris, (not a professor) a protégé of the Minister M. Guizot, who holds *only seven* different appointments, which bring him in 15,000 francs (six hundred pounds) per annum! In this country pluralism is very common, as to offices connected with charities, infirmaries, and dispensaries: but as no remuneration is attached to them, the excluded members have not the same reason to complain.

DEATH FROM VOMITING DURING PREGNANCY.

PROFESSOR FORGET, of Strasburg, has published the case of a female, æt. 28, who was admitted into the infirmary on the 17th of May, on account of incessant vomiting. The woman stated that she had not menstruated for two months, and attributed her complaint to over-work. No organic disease could be discovered:—the usual remedies were employed to allay the irritability of the stomach, but without effect. On the 6th of June, as in spite of her denial, pregnancy was suspected, she was examined by the *toucher*. There was a perceptible enlargement of the uterus: the breasts were also firm, and there were brown areolæ round the nipples. On the 10th of July an examination was again made, and it was then obvious that the woman had reached the third month of pregnancy. On the 13th August the placental murmur and pulsation of the heart of the fœtus were perceptible on auscultation. The vomiting still continued: the patient became emaciated, and died exhausted four months after her admission, and six months after the cessation of the menses. On inspection the only marked appearance was extreme emaciation. Dr. Forget gives a list of the numerous remedies employed, but without any effect. Even prussic acid, under the form of cherry-laural water, failed; and the strength of the patient could not be maintained by nutrient enemata. It is a question whether in such a case, where the life of the female is involved, it would not be justifiable to resort to the use of abortives.

OBITUARY.

At Spa, on the 29th ult., aged 61, Thomas Beard, Esq., M.D., formerly of the Royal Regiment of Artillery. He died universally respected and lamented, after a residence in the above town of 21 years.

Selections from Journals.

DEATH OF A PHYSICIAN IN LESS THAN TWENTY MINUTES FROM ONE HALF-GRAIN OF THE SULPHATE OF STRYCHNIA.

We extract from the last number of the British American Journal the particulars of the following important case of poisoning by strychnia, in which a Dr. W. C. Warner lost his life by mistaking this powerful poison for morphia. The quantity taken represents the smallest fatal dose, and the individual died in a shorter period of time than in any case yet recorded.

At a late meeting of the Addison County Medical Society of Vermont, the undersigned were appointed a Committee to ascertain the facts in the case of one of their members, the unfortunate William Cullen Warner, M.D., of Bristol, who deceased, suddenly, at Montpelier, October 11th, 1846, in the thirty-ninth year of his age, while he was a member of the Legislature.

On account of there having been considerable discrepancy in the published reports relative to this melancholy event, the committee addressed letters of inquiry to the Hon. Daniel O. Onion, M.D., of the Vermont Senate, and to Charles W. Horton, M.D., Member of the House, each of whom, they had learned, were present during most, if not all, the period of the sudden and tragical event. To the inquiries of the committee each of these gentlemen have given prompt and satisfactory replies, which in substance are here subjoined.

1. In your opinion how much sulphate of strychnia was taken?

To this Dr. Onion answers, "I think probably from one-fourth to one-half a grain. As he intended to take, and supposed he was taking, morphia, he would be likely to use the same quantity he was in the habit of using of that article, although there was no evidence at the time of the quantity taken." To Dr. Horton, who was called into the room immediately after the accident, Dr. Warner said, "Dr., I have taken by accident an over dose of morphine; help me if you can," at the same time handing him the phial enveloped in paper.

2. How soon after was any effect produced?

Dr. Horton says, "It is my opinion, from facts subsequently obtained from Gen. W. Nash, who occupied the same room with him, that he felt the effects in less than five minutes."

3. What was the first symptom?

Dr. H. replies, "Constriction of the throat and tightness of the chest, with rigidity of

the muscles in attempting to move." Dr. O. says, "He first complained of a want of air, and requested the window to be raised; whether it was from faintness or a constriction about the respiratory organs, I do not know, although I think the latter."

4. What symptoms ensued from the first till death occurred?

Says Dr. O., "When I first saw him, he was lying upon the bed in a complete *tetanic convulsion*; his head somewhat drawn back; his countenance completely livid, with some matter issuing from his mouth, with frequent moans. The palpebra constantly in motion. This first paroxysm may have lasted some five minutes, which was succeeded by an interval of partial calm." "During this interval," continues Dr. O., "it was somewhat difficult for him to articulate with distinctness. He made several attempts to vomit in this interval, by exciting the fauces with his finger. There seemed to be some constriction about the throat, as it was difficult for him to swallow." "This interval lasted perhaps five minutes, when another paroxysm commenced by a little starting and stiffening of the extremities, and immediately the whole body was thrown into a tetanic paroxysm, in appearance like the first, and lasted two or three minutes, when death ended the struggle."

"In about three minutes from the first paroxysm," says Dr. H., "the tetanus again returned, and in the space of two minutes death closed the scene, with terrible spasms of the whole system. The pulse remained unaffected till the last struggle. It is my opinion that the immediate cause of death was suspension (?) from spasm."

"His appearance," says Dr. O., "led me to believe that death ensued from asphyxia or suffocation. There must have been great congestion of the brain, which of itself might have proved fatal."

5. How soon after taking the article did death occur?

Dr. H. says, "From the best information which I could obtain, I should judge that death ensued in fourteen minutes." "The time from taking the article till death ensued," Dr. O. remarks, "could not have been over twenty minutes."

6. Did his mind remain clear till the last struggle?

"I think," replies Dr. H., "that he was perfectly conscious from the first to the last, except in the paroxysm of tetanus, from the following facts:—1. His appeal which he made to me, as noted in the first article. 2. On loosening his cravat, he requested me to unbutton his vest, at the same time desiring me to take out his gold watch and take care of it. An emetic having been administered, he applied his finger to his throat to provoke a nausea. 4. And from

the last words he uttered, '*I fear, I fear, O God, deliver me.*'"

7. What means were used to prevent the fatal result?

Dr. H. says, "On witnessing the first symptoms, I left the room for the purpose of obtaining medicine. I procured an emetic of sulphate of copper and ipecac.; but returning and finding him in a tetanus, I immediately dashed cold water on his head, face, and breast, and used the most powerful friction on the extremities. He returned to a state of perfect consciousness. I then proceeded forthwith to administer the emetic, making use of diluents copiously. I sent a messenger for some vinegar and ground mustard, and another for a stomach-pump. I used the ground mustard, in warm water freely, to all of which the patient submitted, seeming to be very grateful for the efforts which I was making for his relief. The means were used without any apparent effects." When death had ensued, a number of the medical fraternity being present, we retired into an adjoining room, when the fatal bottle was produced, with the wrapper still around it. On removing this it was found labelled 'strychnine.'" Dr. O. states, that "till this time, we were in ignorance of what he had taken." Dr. H. avers, "that here I wish definitely to state, that before the last paroxysm came on, I was fully convinced in my own mind that the fatal drug was not morphia, but strychnia, and I so declared to those present at the time."

From facts before the committee, derived from reliable sources, it appears that on the afternoon of the second day before the fatal accident, Dr. Warner called at an apothecary store in Montpellier, and asked for and purchased what he supposed to have been a bottle of sulphate of morphia. This was handed to him by the apothecary, enveloped in a brown paper and twisted at both ends. That on the fatal morning Dr. W. tore off the envelope surrounding the mouth of the bottle, and took a portion of what he supposed to have been morphia. He then proceeded to pour some of the supposed morphia into a small phial in which he had been in the habit of carrying sulphate of morphia, when he was suddenly arrested by the symptoms narrated. It is quite clear that he never entertained any idea of the fatal drug he had taken. "I am certain," says his afflicted brother, "that he never for a moment suspected that he had taken strychnia, and was wholly unconscious of the agency which had produced his awfully unprecedented sufferings."

Dr. W. had never possessed very firm health, and for about two years before his death he had suffered from an inordinate action of the heart, for which he had occasionally taken morphia. This affection of

the heart had been the sequence of an inflammatory affection of the chest, which he had early in the year 1844.

The committee have taken considerable pains to ascertain the facts in this melancholy instance of death from a mysterious mistake. The mistake was certainly a singular and mysterious one, both in relation to the apothecary and the unfortunate man. It appears that Dr. W. asked for sulphate of morphia; the apothecary intended and supposed he had sold him morphia till after the fatal event, when he found, through mistake, he had given him, enveloped in a paper, a bottle of sulphate of strychnia in lieu of morphia. This exposition of facts appears to be demanded in justice to the character of the deceased, to the apothecary, and to the medical profession.

In a medical point of view the case is one of much and deep interest, since it so clearly manifests the true and energetic character of this somewhat new medicinal agent. And in a medico-legal consideration, it may prove of immense importance. In the suddenness of the effects, and in the quickness of the fatality, from the use of strychnia, this case is probably without a precedent. Christison, Pereira, and several monographical writers, in the periodicals, have recorded some bad results, and some fatal cases, from over dosing with this agent; but no instance has fallen under our notice in the human subject in which its administration, either accidentally or otherwise, has so speedily and terrifically proved fatal.

"No poison," says Christison, "is endowed with more destructive energy than strychnia. I have," he adds, "killed a dog in two minutes with the sixth part of a grain, injected in the form of an alcoholic solution into the chest. I have seen a wild boar killed in the same manner with the third of a grain, in ten minutes; and there is little doubt that half a grain thrust into a wound might kill a man in less than a quarter of an hour. It acts in whatever way it is introduced into the system, but most energetically when injected into the veins."

With the exception of prussic and oxalic acids, there is probably no agent possessing an equally destructive power. Strong prussic acid is well known to be sufficiently energetic to destroy cats or dogs, when properly administered, in less than a minute. And Pereira examined the body of a man who had accidentally taken oxalic acid in lieu of Epsom salts, and died in twenty minutes.

JONATHAN A. ALLEN, M.D.
ERASMUS D. WARNER, M.D.
WM. P. RUSSELL, M.D.

THERAPEUTICS.

ON THE EMPLOYMENT OF TARTAR EMETIC IN PHTHISIS, AND OF MERCURY IN THE VOMITING WHICH OCCURS DURING PREGNANCY. BY C. E. BAGOT, M.D.

FOR upwards of a year I have been using tartar emetic in all stages of phthisis pulmonalis, and can bear testimony to the opinion of M. Bernardes, as to its great value in the treatment of this formidable disease; but I feel very sceptical as to the possibility of curing the complaint in this uncertain climate by the administration of it. However, as a palliative in the third stage, I believe it to be invaluable; and the physician will find it a most useful adjunct to other treatment in the very commencement of the disease, when there is local dulness on percussion, with congestion, and a bronchitic state of that portion of the lung, accompanied by cough and slight fever. The usual effects of it when given in the third stage are,—the quantity of expectoration becoming daily less, the pus being coughed up with much less difficulty, thereby giving great relief; the stinging pains in the chest sometimes entirely disappear, the tongue cleans, the chills, hot skin, and perspiration, are so much diminished as to give foundation for calling the medicine a specific for the hectic fever; the pulse becomes softer and fuller, but seldom less rapid; the bowels much more regular, and it is well worthy of remark, during the careful administration of the tartar emetic, that, far from acting as an irritant upon the mucous membrane of the intestines, it will generally be found that there is much less irritation and purging than in cases treated by other means. It may be also observed, that, from the chest symptoms being so much relieved, the necessity for counter-irritation of all sorts is I may say entirely done away with, to the great comfort of the patient. It is due to my very intelligent friend, Mr. Thomas Archer, of Mount Pleasant Square, to mention that he first proposed the use of it to me as a specific in phthisis as far back as a year and a half ago, it having struck him that the benefit experienced by patients in consumption from the use of emetics, was not so much from the emetic action, as from a specific principle contained in the emetic.

The mode in which I usually administer it is in pill, which will be found more desirable than a solution, as the patient can bear larger doses, and it is much less liable to produce vomiting or irritation of the bowels: besides, the large quantity of liquid exhibited, as recommended by M. Bernardes, is not at all desirable. In pill it may be administered for a commencement in doses of one-twelfth to one-twentieth of a grain, in

combination with a quarter to a sixth of a grain of hippo (?), and three grains of white poppy, or extract of hop, gradually increasing the dose to one-sixth of a grain of tartar emetic in combination with one grain of hippo (?), "every third or fourth time." The stomach becomes reconciled to it in a very short time, and when the use of it has been long continued, the fondness of the patient for his pill becomes very remarkable. We cannot expect that an invalid will receive the same benefit in this climate from the use of any medicine in phthisis, which he might in a more southern latitude, where, from the great mildness of the air, it is very possible that absorption of tuberculous matter might take place as soon as the morbid process of deposition received a check; but even in this country, where such beneficial results have been obtained, the remedy is worth a trial. The use of it requires careful watching.

"In June, 1846, I was requested to visit Mrs. Furlong, then residing in Sandwith-place: she told me that she was one month pregnant of the seventh child: then she had for the previous fortnight been suffering from constant nausea and vomiting, which had reduced her strength very much, but she was still able to attend to her household duties. I succeeded after a few days by the usual routine practice, in quieting her stomach so far that she did not suffer more than the generality of pregnant women. I then lost sight of her for nearly six weeks. At the end of that time I was again called on to see her: the following was her statement:—She had been as I left her for about a fortnight, when, from some indiscretion in diet, the vomiting had returned, gradually becoming worse, until at last she had to remain entirely in bed from weakness and exhaustion. She had now been fourteen days in bed, during which time she had had incessant vomiting; she could not swallow the smallest quantity of either liquid or solid, even American ice included, without its being immediately rejected by the stomach. She was reduced nearly to the state of skin and bone; her pulse was feeble, and she was scarcely able to move in bed; she had not the least constitutional disturbance, neither pain or pressure in the epigastrium, nor hot skin, nor headache, nor quickness or sharpness of pulse; in fact, it seemed to me to be one of those cases of vomiting occurring during pregnancy from some mysterious sympathy with the uterus which has heretofore but too often entirely baffled the efforts of the most experienced physician. It is needless for me to occupy space by describing my treatment, which principally consisted of the most powerful sedatives, including morphia, acetate of lead, ice, prussic acid, &c. together with blisters over the stomach,

enemas, &c., none of which, however, produced the slightest effect, and she was gradually sinking, when, ere resorting to the practice so highly recommended in extreme cases, viz. that of producing abortion, I resolved on trying calomel, with the intention of bringing her system under the influence of mercury if possible, having used it before in vomiting depending on a peculiar state of irritation in the uterus of an unmarried woman. I prescribed it for her three grains every third hour; at first it was partly thrown up, but I persevered in it, and in about twenty-four hours it affected her mouth, acting like a charm. The vomiting entirely ceased, and her appetite immediately returned. I kept her for some days under the influence of the mercury, and after this she scarcely ever had the slightest nausea, and at the proper time was delivered of a fine healthy child, thereby proving that there does not exist any foundation for the popular prejudice against the use of mercury in pregnancy." (?) "I may mention that this woman suffered very much from sickness during her former pregnancy."—*Dublin Medical Press.*

APOTHECARIES' HALL.

NAMES of Gentlemen who have passed their Examination in the Science and Practice of Medicine, and received Certificates to Practise, on Thursday, 2d September, 1847:—
William Charles Homfray, Monmouth.—
John Lucas Worship, Long Melford, Suffolk.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Aug. 28.

BIRTHS.	DEATHS.	Av. of 5 Summ.
Males.... 613	Males.... 571	Males.... 479
Females.. 609	Females.. 513	Females.. 461
1222	1084	940

DEATHS IN DIFFERENT DISTRICTS.

(24 in number;—*Registrars' Districts, 129.*
Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	173
NORTH—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 366,303)	171
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	204
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 393,247)	257
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich .. (Pop. 479,469)	279
Total	1084

CAUSES OF DEATH.

CAUSES OF DEATH.	ALL CAUSES	Av. of 5 Summ.
ALL CAUSES	1084	940
SPECIFIED CAUSES	1082	935
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	366	226
Sporadic Diseases, viz.—		
2. Dropsy, Cancer, &c. of uncertain seat	135	103
3. Brain, Spinal Marrow, Nerves, and Senses	134	157
4. Lungs and other Organs of Respiration	195	226
5. Heart and Bloodvessels	30	25
6. Stomach, Liver, and other Organs of Digestion	105	94
7. Diseases of the Kidneys, &c.	8	8
8. Childbirth, Diseases of the Uterus, &c.	15	10
9. Rheumatism, Diseases of the Bones, Joints, &c.	10	7
10. Skin, Cellular Tissue, &c.	2	2
11. Old Age	55	50
12. Violence, Privation, Cold, and Intemperance	27	28

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	21	Convulsion	32
Measles	47		
Scarlatina	16	Bronchitis	22
Hooing-cough	23	Pneumonia	27
Diarrhoea	124	Phthisis	120
Typhus	74	Dis. of Lungs, &c.	5
Dropsy	17	Teething	17
Sudden deaths ..	6	Dis. Stomach, &c.	6
		Dis. of Liver, &c.	13
Hydrocephalus ..	36		
Apoplexy	25	Childbirth	8
Paralysis	15	Dis. of Uterus, &c.	7

REMARKS.—The total number of deaths was 144 above the weekly summer average. This large excess of mortality must be ascribed chiefly to the great increase of deaths from diarrhoea and typhus fever.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	30.01
" " Thermometer	60.3
Self-registering do. max. 98.5 min. 36.5	
" in the Thames water — 64.8 — 61.5	
a From 12 observations daily. b Sun.	

RAIN, in inches, 0.13: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 1.3° below the mean of the month.

NOTICES TO CORRESPONDENTS.

A correspondent, who addresses us under the signature of "Somebody," must forward his name and address before we can insert his letters.

Mr. W. Allison.—Our correspondent will find that we shall always be ready to act on the principle of "Audi alteram partem." We have inserted the letter with the omission of some parts, which appeared to us to be decidedly objectionable, and rather calculated to excite an angry reply, than to enforce conviction.

Mr. W. H. Holman's case will be inserted.

RECEIVED.—Dr. Smith,

Lectures.

COURSE OF SURGERY.

Delivered in the years 1846 and 1847,

BY BRANSBY B. COOPER, F.R.S.

Surgeon, and Lecturer on Surgery at Guy's Hospital.

LECTURE X.

Suppuration—its nature and causes—source and formation of pus—its period of commencement and duration—description of pus—general and local symptoms of suppuration—cold abscess—suppuration of mucous membranes—of cellular membrane—of bone—of arteries—of veins—danger of suddenly checking it—different methods of and cautions in opening abscesses—psoas and lumbar abscesses—similarity of the former to hernia, and its treatment.—Hectic fever—its causes—definition—symptoms—treatment.

SUPPURATION.

I HAVE already pointed out to you, gentlemen, that the different results of inflammation are resolution, adhesion, suppuration, ulceration, and mortification. I shall now describe to you what is frequently termed suppurative inflammation.

Suppuration may be regarded as the result of an inflammatory action which is incapable of producing adhesion, or of the interruption of the adhesive process by any local or constitutional cause, as, for instance, by loss of substance, the presence of a foreign body, or the effusion of inorganisable matter. Each of these causes may tend to interfere with adhesion, and lead to the formation of pus.

It seems more natural to conceive that suppuration should result from some interruption to a natural process, than that nature would sometimes adopt one mode of reparation, and sometimes another.

We have an instance of interruption leading to a purulent secretion, in the healing of a blister, when, if the cuticle be removed, and the cutis left exposed, minute granulations form, suppuration is established, and the healing by adhesion is prevented; so that, in fact, purulent discharge is to be considered as a defect in the simple means of reparation of lesion, and as a process inseparable from a more complicated and protracted mode of cure. This is equally true, whether it be induced by local or by constitutional causes. Continued irritation from the presence of a foreign body, such as a piece of glass left in a wound,

will prevent adhesion, and lead to suppuration. Or the constitution of the patient may be at fault, his blood deficient in plasma, and therefore incapable of becoming organised by the first action of inflammation; suppuration therefore follows. We often find this to be the case after amputations and other operations in persons of a strumous diathesis; therefore every surgeon studies well the constitutional powers of his patient before he subjects him to surgical operations.

The presence of pus is not, however, always to be considered as an unhealthy or undesirable condition, for it is sometimes fulfilling a most salutary office; as in granulating sores after gun-shot wounds, or extensive loss of substance from any other cause, and, indeed, the phenomena attending its formation are most highly deserving of your attention.

There is a great difference of opinion respecting the formation or source of pus globules, as to whether pus is a new secretion, or is merely altered colourless blood-corpuscles, or the debris of the inflamed tissues. Pathologists have entertained different views on this subject.

I am disposed to believe that it is a secretion, and that an apparatus is formed on the inflamed tissue for the purpose of its elimination from the blood, and that it does not exude from the capillaries in the form of pus globules. This theory is objected to by some, on the ground that the apparatus alluded to (the pyogenic surface), is not always present when pus is found, as, for instance, on mucous membranes; but it has been discovered by microscopic investigation that a peculiar surface is always exhibited where pus is poured out, even from a mucous membrane, and, indeed, it involves the question of how much surface action alone may influence the formation of pus. The period at which pus results, between the time of interruption and the termination of inflammatory action in adhesion, is very various, and more especially when it occurs in any other tissue than the mucous membrane, in that the elaboration of this fluid often occurs so rapidly that there appears to be almost an exception to the general rule laid down, that its formation is a secondary action; for here we find it established nearly as soon as the inflammation itself is set up. In gonorrhoea, purulent discharge is known to occur sometimes fourteen hours after infection, while, even in acute abscess, it takes several days for pus to be secreted in the other tissues of the body, and under chronic inflammation it may be months before an abscess is formed. There are three causes for this diversity—namely, the texture of the part affected, the constitution of the patient, and the nature

of the source of irritation. The duration of suppuration is also very various; it may last but a few hours, as when seated in the mucous membranes, or it may remain for months or even years, as sometimes happens from lumbar and psoas abscesses, and from fistulae. This difference results from the same causes as those that modify the rapidity of the first formation of pus.

I have already alluded to the great tendency to purulent effusions, possessed by the mucous membranes. I will now direct your attention to the protracted symptoms which result from the formation of matter in those tissues of the body which have less vital energy, and in which the premonitory, as well as the immediate, symptoms are remarkably slow in their progress.

The influence of the constitution in modifying the formation of pus is well shewn by the length of time during which the absorbent glands will remain in a state of inflammation in scrofulous patients before they suppurate, and the rapidity with which matter is formed under trivial exciting circumstances in irritable and sanguineous temperaments.

The nature of the injury, as well as that of the different kinds of disease, produces peculiarities with reference to the rapid or sluggish formation of matter; thus, an extraneous body, remaining as a source of irritation, soon leads to inflammation of the absorbents, and suppuration in the glands. Pus rapidly forms in phlebitis, while, in many diseases termed chronic, suppuration is but slowly developed. The quantity of pus secreted also varies considerably, but appears rather to depend upon the constitution of the patient than upon the character of the inflammation. I shall now describe to you the appearance and general physical conditions of pus. It is a white, creamy, emulsion-like liquid, composed of globules suspended in a fluid termed the liquor puris; its specific gravity is 1030, it putrifies with difficulty, and has an alkaline reaction, but soon becomes acid if left at rest exposed to the atmosphere. If pus be allowed to remain at rest for some time the globules sink to the bottom, they having a greater specific gravity than the fluid in which they were suspended. These globules, if examined under a microscope, are found to be between $\frac{1}{1000}$ and $\frac{1}{500}$ of an inch in diameter, to present a nucleated or granular appearance, and, as I have already told you, are supposed by some to be the white corpuscles or exudation globules of the blood which have undergone some morbid change; but when it is considered that constitutional symptoms almost always mark the formation of pus, it would seem to indicate that it is an induced action which produces the change, that the fluid is a distinct secretion, and not merely

one of the constituents of the blood in an altered condition; one, too, which is most important to the processes necessary to the growth of the body, and therefore it seems improbable that any part of the blood should, at one time, be employed in a healthy action, and at another fitted for a diseased one, without any change occurring beyond a mere physical one. It must be acknowledged, however, that the conditions which lead at one time to the deposition of fibrin, and at another to the formation of pus, are but little understood; and it must be allowed that generally an apparatus, termed the pyogenic, consisting of a kind of glandular arrangement, is formed before pus is secreted, and that this fluid does not result from the mere solution of inflamed tissues.

It has been supposed that an ulcerative process, or what may be termed an absorptive disintegration, occurs before matter is formed, or can be deposited: this hypothesis seems to have arisen from the idea of the necessity for a cavity being first formed to receive the pus, especially in deep-seated abscesses; but if we reflect that pus is eliminated, instead of the exudation of plasma, no such preliminary action can be considered necessary; and certainly it does not take place on mucous surfaces, as suppuration will go on for weeks in ophthalmia and gonorrhoea without any loss of the substance of the affected membrane.

If we regard this matter from a surgical point of view, it may be said that suppuration occurs under three conditions—firstly, through the medium of a pyogenic membrane, or in the formation of abscesses; secondly, as being more distinctly secreted from mucous membranes (and even in this case there is reason to believe that a granulating apparatus is formed before pus can be secreted;) and, thirdly, from the formation of pus in granulating sores, as during the curative process of ulcers. The constitutional symptoms pathognomonic of the formation of pus are so well marked as to render the diagnosis comparatively easy. Febrile symptoms generally result from the exciting cause of inflammation before matter is formed, and, indeed, frequently subside from the influence of remedies without the occurrence of suppuration: but if the irritative fever continues, and its violence remains unmitigated, resisting the usual means employed, there is reason to suspect the probability of suppuration, which will generally be soon determined by the premonitory symptom of rigors, the severity of which will depend upon the importance of the part affected, the inextensibility of the tissue inflamed, and the constitution of the patient. This rigor, the forerunner of the formation of pus, is, indeed, a remarkable phenomenon in the pathology of suppuration. It appears

that, during its presence, the blood is driven from the surface of the body to the heart and large vessels, at which stage a sensation of cold is felt over the whole surface, sometimes even to "chattering of the teeth," as in ague; reaction then occurs, as if the heart were suddenly stimulated, and the blood is sent with unusual force back to every part of the body, and more especially to the part affected.

This constitutes what is termed the hot fit, during which period the inflamed tissue rapidly advances towards abscess. The rigor may be perhaps considered so far a salutary condition, as it prepares the constitution, by a sudden suspension of all the functions, for making an effort to complete the object upon which it is employed. The sensation of cold, so frequently experienced by healthy persons after a hearty meal, is a somewhat analogous condition, when nature is especially preparing for the function of digestion.

If the tissue inflamed is such as admits of a ready formation of pus, as, for instance, the mucous membranes, neither rigors, nor any other indication of constitutional disturbance, will invariably occur; probably in consequence of the facility with which the pus-forming apparatus is developed by mucous tissues. Abscesses of the cellular membranes are not usually accompanied by much irritative fever, or preceded by distinct rigors, they are found also to possess the power of rapid reparation; and, indeed, it seems as if the constitution sympathised in proportion to the difficulty of the ultimate restoration of the affected structure.

Local signs also present themselves as pathognomonic indications of the formation of abscess. The patient experiences a change in the character of the pain, which becomes altered from an acute hot pain to a throbbing sensation, and a darker blush covers the surface of the diseased part. The swelling generally becomes circumscribed and harder in its circumference than in its centre, where the skin is thinnish, and a fluctuation at this period may usually be detected. If the abscess be not now opened, an ulcerative process is set up towards the surface of the body, and the pus is spontaneously evacuated.

But, as I have remarked to you before, gentlemen, it is not always that such distinct symptoms mark the formation of pus, for under certain constitutional conditions, as, for instance, after protracted illness, scarlet fever, measles, and other exanthemata, it is not uncommon for vicarious abscesses to form one after another in different parts of body; these are unattended by either the usual constitutional or local signs of suppuration; neither irritative fever nor rigor are present, there is no pain in the part nor

even redness, and yet large collections of pus are found. Chelius and other surgeons have termed this "cold abscess." It portrays, in fact, a general defect in nutrition, and deterioration of blood, and not a peculiarity either in the character of the inflammation or of the tissue affected. Under such circumstances the pus discharged is generally of an unhealthy kind, thin, and often foetid, and it continues to flow in large quantities. Colliquative sweats follow, and the patient soon sinks under the continued draining to which the system is subjected. In the post-mortem examination of these cases you will frequently find the matter diffused over very large surfaces, and passing down even to the bones, which may be found denuded of periosteum, and would probably go on to exfoliation if the patient survived sufficiently long.

The character of the pus gives the best indication of the constitutional powers. If it be "pus laudabile," that is, of uniform consistence, of a yellowish white colour, and free from odour, the surgeon has confidence in his patients' recovery, and regulates his treatment accordingly. This renders it very important to examine carefully the contents of an abscess. Suppuration produces very various effects in the different tissues of the body, although all seem more or less obnoxious to its occurrence. The mucous membranes are more particularly subject to it, the formation of pus from their capillaries, and the continuance of the action, seems to be maintained in that tissue with the least degree of constitutional irritation.

Cellular membrane is also very prone to suppuration, and, in most cases of common abscess, the cellular tissue is the seat of its formation; hence, matter is frequently diffused over large surfaces, and leads to most mischievous results, by separating this universal connecting medium from important organs of the body, and interfering therefore with their natural functions.

When matter forms in bone, considerable constitutional disturbance arises from the little extensibility of the tissue, but the presence of abscess in bone is denoted by very similar symptoms to those which occur on the formation of matter in the other structures of the body, such as rigors, and the peculiar throbbing pains, but which are much increased at night. The soft parts soon become affected and ulcerate, from the continued pressure of the matter towards the surface, but will pass through or dissolve the bone to obtain means of exit. I advisedly use the term dissolve; for pus has, indeed, the power of dissolving bone, and I believe I was the first to explain the fact. I was led to the consideration of the subject from testing some necrotic pus which I found contained a very large proportion of

phosphate of lime, while healthy pus contains only a trace. I instituted some experiments on the subject which tended to corroborate my theory, and I will hereafter explain to you the results I arrived at, when I am more perfected, than at present, in the rationale of the process. You may, many of you, have observed, gentlemen, that I have lately applied dilute phosphoric acid to bone in a state of exfoliation and necrosis, and you may also have probably been struck with the rapidity with which the portions have been thrown off, or, I ought rather to say, removed. This object has been obtained by the phosphoric acid, converting the phosphate of lime into a biphosphate, in which atomic form it is rendered soluble, and is proportionably more readily removed. Necrotic pus itself affords an acid reaction. The treatment of abscess in bone is similar to that to which recourse is had when it is formed in other structures, and will be more particularly described when I treat especially of the diseases of the bones.

Fortunately, *arteries* under the influence of inflammation rarely suppurate; were they prone to this pathological condition, the application of a ligature could no longer be available as a remedy for aneurism; but in chronic abscesses it does sometimes occur that an artery will become opened by an ulcerative process, and therefore, even in the simple operation of opening an abscess, always ascertain satisfactorily that there is no communication between the pyogenic membrane and the interior of an artery, or you may have reason to regret the hastiness of the procedure. I hope you have observed, gentlemen, that I ever set you this example, for I believe I never made an incision in a living body without first having closely examined as to the possibility of some existing danger.

The *veins* seem more disposed than *arteries* to suppurate, and the constitutional effects produced when this occurs are always most alarming. There may, however, in my opinion, be a just doubt in cases of phlebitis whether the pus is really formed by the *vasa vasorum* of the affected vein, or whether it be taken into the venous blood by endosmosis: the latter view would imply that the veins are capable of performing a function analogous, if not identical, with absorption. The pathology of phlebitis will be more dwelt on when treating of the diseases of veins.

Granulating sores emit a considerable quantity of pus globules, which seem to have a beneficial effect in the healing of an ulcer.

It has been supposed by some physiologists that the pus is formed by the exudation of the liquor sanguinis from the capillaries of the granulations, and to become organized and form granulations while the fibrin is de-

posited; that the white exudation corpuscles are ejected as incompetent to the process of restoration beyond the mere office they perform in maintaining the softness and moisture of the granulating surface.

Purulent discharge is sometimes useful in facilitating the escape of extraneous substances from the living body; it is assisted, however, by the process of ulceration, which is necessary to effect this object.

When the constitution of a patient has been for a long time subjected to the influence of a purulent discharge, as from a chronic abscess on the extended surface of an old ulcer, care should be taken not too quickly to check this habitual drain, or even if it should suddenly stop spontaneously, medicinal remedies, such as purgatives, sudorifics, &c., should be administered to obviate the danger arising from its suppression. Issues, setons, and blisters, are also had recourse to as the best prophylactic means which can be employed.

You will have many opportunities of observing in the wards of this hospital, patients suffering from pains in the head, disturbance in the natural functions of the bowels, and other constitutional derangements, resulting from the sudden healing up of large ulcers: these require purgative medicines for their relief. Many cases are on record of the relief of hæmoptysis by setons and issues, and of the return of the disease as soon as the artificial discharge had been checked.

An abscess differs only from suppuration of the surface, in the pus being confined, which leads to greater constitutional derangement than when the matter is freely emitted, either from mucous surfaces or from granulating sores.

The period at which an abscess should be opened is an important subject for consideration: as a general rule, I should say they ought not to be opened until the local heat, *i. e.*, the temperature of the inflamed part, begins to subside; for if it be opened before that time at which the abscess is termed "ripe," you interfere with the action necessary to the formation of pus, and are liable to produce an inflammation unfavourable to that action. To bring about the condition favourable to the evacuation of the contents of an abscess, poultices and fomentations are employed. This, gentlemen, is a matter which you will perhaps consider as of very little importance, and somewhat beneath the dignity of a surgeon to pay attention to; but such is not the case, for there may be, I am almost inclined to say, scientific ability displayed, not only in the choice of the appropriate period for the application of a poultice, but also in the very mode of making it. Mr. Abernethy did not think it unworthy of himself to dwell upon this sub-

ject in his surgical lectures, and would often teach nurses how to make and apply a poultice. It should be made of stale bread, rasped to an impalpable powder in a basin; boiling water is then to be poured upon it, a little sweet oil added, and the whole stirred up until it is worked into a smooth pulpy mass. The linseed meal which is generally used in hospitals contains mustard seeds, and other irritating matters, which very frequently do more harm than good.

As soon as there is evidence of suppuration having taken place, the earlier the pus is evacuated the better; unless perhaps we make an exception in the case of patients of a scrofulous diathesis, in whom I have generally found it better to leave nature to effect the evacuation of the matter in her own way, and to direct attention more particularly to the improvement of the constitution by internal remedies.

One great object with the surgeon should be to prevent unsightly cicatrices; and my experience leads me to believe that in strumous patients the scars are less when the abscess is left to open by ulceration than when the lancet is employed, unless the evacuation be effected by making three or four small punctures, and afterwards applying gentle pressure to promote the escape of the pus.

I suppose there can be but little doubt that pus is capable of being absorbed under certain circumstances: I do not mean as in phlebitis, taken up in the form of pus, but that the globules sometimes undergo disintegration, and are removed by the absorbent vessels; hence certain medicines are employed termed deobstruents, such as mercurial plasters, iodine, &c.

When abscesses are to be opened, the object may be effected by caustic or setons, instead of the knife, but the latter mode is so far preferable that I shall say but little of the employment of the others, as from their protracted influence they are liable to do considerable injury.

In cases of encysted tumors, in which instead of pus a kind of serous secretion is thrown out, corresponding to that which is sometimes called a "cold abscess," the seton may be desirable for the purpose of exciting a degree of inflammation sufficient to obliterate the cyst. I have successfully treated such cases by the introduction of a seton, but cannot consider that this disease should be designated an abscess. [Case, vol. 1, Guy's Hospital Reports.]

A Case of hydrocele of the neck.—David Hughes, aged 20, a private in the Royal Horse Artillery, (from which corps he was discharged in consequence of this disease,) was admitted into Guy's Hospital on the 3d of June, 1835. In appearance he was healthy, although of spare habit: twelve-

months ago, his comrades told him that his neck was swollen, but he could not perceive it himself; a month after, however, he felt a swelling a little in front of the centre of the sterno-mastoid muscle; it moved readily, and in deglutition was raised with the larynx. He was treated with leeches, and also with iodine, both internally and externally; nevertheless the tumor continued to grow until his admission into the hospital, when he was much emaciated. The tumor occupied the whole space between the sterno-mastoid and trapezius muscles, extending upwards as high as the mastoid process, and downwards as far as the junction of the middle with the scapular third of the clavicle, and horizontally from this point to the sterno-clavicular articulation. The lower and anterior part of the tumor was the most prominent, and of the most recent formation; the whole swelling seemed divided into three lobes, which did not communicate, though each fluctuated. From its size it pushed the larynx very much over to the right side; the integuments over it were of natural colour; it did not pulsate, nor did it appear to interfere with the circulation of blood in the neck; he experienced neither dysphagia or dyspnoea.

On the 10th of June I made a small incision down to the sac at the most prominent point of the anterior cyst, and punctured it; about five ounces of serous fluid escaped, the first three clear, but the last two coloured with blood. I then introduced a long canula, furnished with a trochar, to which were attached four threads of silk, and pushing the trochar through the skin on the opposite side, passed a seton through the cyst; the tumor was then diminished about one-quarter, shewing that only one cyst had been opened. I thought it best to wait the result of this operation before evacuating the other cysts. For the first two days he went on remarkably well, but on the third after the operation he had considerable pain and swelling of the cervical glands and tonsils, with much constitutional irritation. There was an unhealthy discharge from the wound; he was ordered calomel and opium, effervescing draughts, and leeches, and the seton was removed.

He soon improved, and continued doing well till the 17th of June, when, the wound having ceased to discharge, a female catheter was introduced, and withdrew an ounce of sanguineous fluid; this was repeated once or twice. The tumor was now not more than one quarter its original size, so that it appeared as if the other cysts had ulcerated through, and discharged their contents. He was then ordered quinine and porter, and the tumor became gradually smaller, and its parts consolidated. On the 1st of July I ordered it to be strapped with Empl. Ammoniac. c. Hyd. with the hope of entirely

obliterating the cysts. This treatment was continued for a fortnight, and the tumor was not more than one-eighth its original size. On the 16th he was again attacked with cynanche, which was relieved in the same way as before. A week after this attack the tumor was considerably larger, and fluctuated posteriorly and inferiorly, when accordingly an opening was made, the other opening having closed. After this he had another febrile attack, which left him much debilitated; but on the 3rd of August, scarcely any tumor was perceptible, no fluctuation could be felt, and there were distinct thickenings in the position of the cysts. From this period nothing untoward happened till the 11th of September, when some slight diffused inflammation covered the left side of the neck, which however yielded to mild sudorifics and salines. On the 1st of October, a portion of the tumor again secreted, and three drachms of serum were evacuated by the lancet. The cyst soon became obliterated, the opening healed, and after this he had no further relapse. He remained in the hospital till the beginning of November, when he was considered perfectly well.

I once admitted into Guy's Hospital a patient, sent up to me by Mr. Rump, of Holt, in Norfolk, who was the subject of a deep-seated tumor on the left side of the neck, causing difficulty in breathing and swallowing. From the manner in which it was tied down by the muscles, fluctuation was very indistinct, and I had the patient brought into the operating-theatre with the idea that I was about to remove a solid tumor. But in the progress of a careful dissection for its excision, the sac was opened, and several ounces of fluid escaped, this proving the true nature of the case. I introduced a portion of lint into the sac, which became obliterated, partly by adhesive inflammation, and partly by the process of granulation: the patient was discharged perfectly cured.

This case I consider to have been exactly of the same nature as the one last described; viz. an adventitious formation of a serous cyst, which is certainly not inappropriately termed a hydrocele.

I believe the introduction of a seton is a better mode of treatment than injection in these cases, as it affords a more ready means of removing the source of irritation, and is less protracted than the employment of caustic for the purpose of producing obliteration.

When a knife, lancet, bistoury, or any cutting instrument, is employed for the purpose of opening an abscess, the most prominent point is selected, where, indeed, the skin is the thinnest, and the fluctuation most distinct. I might dilate, gentlemen, upon the manner in which the instrument is to be

held, the kind of motion which is to be given to the fingers, and upon all the niceties of manipulation, but you would learn little from my description; you must witness the *modus operandi* in the surgery and wards of the hospital, then do it yourselves, and the only instruction that I can give you is to use a clean sharp instrument, and to perform the operation with as much care as you could possibly devote to one of higher surgical importance.

There are various opinions as to the size of the opening to be made for the evacuation of an abscess: some surgeons recommend that it should be laid open along its whole extent, not only for the purpose of promoting the free escape of the fluid, but also with a view of exposing the pyogenic membrane to the influence of external agents, and so to destroy its power to produce fresh quantities of pus. I am not myself an advocate for such practice, as it leaves a large scar, and, moreover, retards the healing of the wound. I usually make an opening not more than three quarters of an inch in length, which is quite sufficient for the free exit of the matter; and if judicious constitutional remedies be employed, the recurrence of the formation of abscess may generally be prevented, as it more frequently depends upon the state of health of the patient, than upon local circumstances.

In large inguinal abscess I have found Ricord's method of puncturing them in three or four different places, instead of evacuating the matter by one long opening, answer remarkably well, and then applying pressure over the emptied abscess; you thus avoid a longer cicatrix, and at the same time hasten the recovery of the patient. But of this description of disease, psoas and lumbar abscesses are the most difficult to treat, and this difficulty arises from constitutional defects more than from any topical peculiarities in the disease. They generally arise most insidiously, and attain a considerable size, without either pain or redness of the part, and little further inconvenience is experienced than an inability to active exertion. Sometimes, however, their formation is attended with pain in the loins, and in psoas abscess much inconvenience in extension of the trunk, which puts the psoas muscle on the stretch. The abscess sometimes forms above Poupart's ligament, but generally passes beneath it upon the thigh, requiring considerable knowledge and close investigation to distinguish it from hernia; in some circumstances it assimilates to that disease, not only in position, but also in some of the symptoms. Both psoas abscess and hernia dilate on coughing; both will sometimes return into the abdomen during the recumbent posture, and if there happen to be any derangement of the functions of the bowels

concomitant with psoas abscess, there might arise great difficulty in distinguishing it from hernia; and I have seen patients wearing a truss upon a psoas abscess owing to such a mistake. The history of the case, the appearance of the patient, and the strict examination of the swelling, must be the means employed for forming a just diagnosis between the two diseases.

Having discovered the presence of a psoas abscess, it becomes still a subject of great importance to ascertain whether the bones of the spine are diseased; and I know of no certain means of acquiring a knowledge of this fact but by the analysis of the pus, to ascertain the presence of phosphate of lime. A difficulty arises, however, in the application of this test, since it is necessary that the abscess should be opened to obtain the pus; and I cannot call to my recollection a single instance of permanent recovery after a psoas abscess had been opened when the spine was the seat of the disease; but lumbar and psoas abscesses may occur without the vertebræ being implicated. I have often seen patients admitted into the hospital with a small swelling upon the upper part of the thigh or loins, and nearly free from any constitutional derangement, scarcely suffering inconvenience, and perfectly unaware that their lives were in danger; yet few of them have long survived under the attacks of this disease. I scarcely know what treatment to recommend, but have followed a plan which, I regret to say, has in some respects proved as ineffectual as all others, although certainly it has tended to lengthen life beyond the period at which it would have terminated had the abscess been opened. My first object is always to improve the constitutional powers by nutritious food, porter, and strictly-enjoined rest; at the same time I administer tonic medicines, with iodine. The patient day after day considers himself improved in health, and says, that, although he suffered little before, he now finds, from the improvement he experiences, that he had been more unwell than he had himself thought. The dresser, perhaps, informs me that the abscess increases in size; I walk from the bed, or perhaps order cold to be applied to the swelling, hesitating as to what is best to be done, knowing that directly the abscess is opened, constitutional symptoms will arise, and from that moment the patient will begin to sink. I therefore always refrain from evacuating the abscess until the tumor on the thigh is shut out from the cavity of the abdomen by an adhesive inflammation; and this object I have attempted to effect in some cases by applying a little pressure, such as that produced by a weak truss, at the point of communication between the thigh and abdomen. The

evidence of this object being attained is the impossibility of pressing the fluid into the abdomen, and the diminished impulse of the femoral tumor on coughing.

The pus is now to be let out, either by a free opening, or whether by small valvular openings, as recommended by Abernethy, so as only to evacuate a small quantity at a time, I really do not know how to advise, as the results have proved the same under both circumstances. From my experience, perhaps I feel inclined to give the preference to the small valvular openings, as the shock is not so sudden or violent to the constitution. Whichever method is employed, I confess I entertain but little hope of the recovery of the patient. I regard these abscesses, when concomitant with disease of the vertebræ, as the highest degree of strumous development; and hectic fever, with all its horrors, generally completes the catastrophe.

When suppuration has continued for a great length of time, hectic fever is almost certain to supervene, and may in fact be considered as the remote consequence of purulent discharge, just as irritative fever may be looked upon as the immediate effect of the formation of matter.

Hectic fever has been supposed to arise from the absorption of pus; but it rarely commences until an abscess has been opened and matter has continued to flow for some time, which would scarcely lead to the supposition that it was absorption of matter which induced the fever: indeed, it sometimes occurs before suppuration has commenced—as, for instance, when structures are affected which possess but little vitality, such as large joints, and more especially in affections of the knee or hip. Hunter says, “hectic fever depends upon the disease of a part beyond its powers of acting for its restoration, and beyond the powers of the constitution to overcome the disease. Whatever, therefore, will long and obstinately tease the constitution, may become the cause of hectic.” The constitutions most obnoxious to hectic are the weak and irritable; and, indeed, sometimes hectic symptoms commence in such persons as if idiopathically, or proceeding from some very slight source of irritation, even during the healing of a sore in which there seems to be no impediment to recovery.

Hunter has described the symptoms of hectic fever in the following words:—“A kind of slow dissolution of animal life; a general slow fever, with great debility, irritability, languor, want of appetite, paleness of the skin, sweats easily provoked, and frequently arising spontaneously, sometimes attended with vomiting and purging, but with the secretion of a clear urine.” In fact, he seems to regard it rather as a con-

stitutional disorder, than one arising from any peculiar source of irritation, although it must be acknowledged that it generally results from protracted suppuration, or that it occurs in the commencement of the formation of abscess in constitutions already enfeebled by prior disease.

Hectic fever is often attended with a distinct cold and hot fit, resembling ague, but is not, like intermittent fever, regular as to the periods of accession, although the exacerbations are usually in the evening; but it may be distinguished from ague by the irregularity of the cold and hot stages, and by their duration. The usual form of hectic may be recognised by the tendency to chilliness of an evening, followed by a hot skin and sensation of burning of the palms of the hands and soles of the feet, rapid pulse, great thirst, and a circumscribed flush on one or both cheeks. The patient continues restless, often sleepless, during the night, and towards morning a copious, although perhaps a partial, perspiration carries off the fever, and leaves him pale and languid, but nevertheless with an accelerated pulse. Each successive attack renders the patient weaker than before; the slightest excitement, as that produced even by approaching his bed, brings a flush upon the countenance and dampness upon the skin: the eye has a glassy brightness, sudden paleness succeeds the momentary blush, the voice is scarcely audible, the lips are dry and red, the tongue clean, but unnaturally polished, and sometimes aphthous sores are found upon its edges. If these symptoms continue unrelieved, the destruction of animal life is soon accomplished, and the patient dies from complete exhaustion.

The administration of internal remedies for the cure of hectic fever must be directed to the intention of strengthening the constitution, and enabling it to support the irritation to which it is subjected; under certain circumstances they may also be intended to induce an altered and improved action in the diseased structures.

When the patient is so weak and irritable that all hope of improving his condition is passed, while the source of the constitutional disturbance remains, its removal, if admissible, should be had recourse to; and, even after aggravated hectic symptoms had supervened, I have frequently seen patients rapidly recover on the amputation of suppurating joints, and the removal of other causes of that disorder. Generally it must be considered, however, that the best period for surgical operations is past when hectic symptoms have supervened; and therefore surgeons usually remove the source of constitutional derangement, when such a course appears advisable, before hectic is established.

In the treatment of weak and irritable patients constitutionally prone to hectic fever, great care must be taken not to lower their powers, even in the local depletions which may be necessary in the case of external injury.

General blood-letting, under any circumstances, can scarcely be admissible; but, if blood must be abstracted, it should be by the application of leeches or cupping on the part affected.

Even purging must be cautiously had recourse to, as it often tends very much to lower the powers of the patient, and to render him highly irritable; therefore nothing beyond merely maintaining the natural alvine excretions should be desired. I have often seen patients as long in recovering from the prostration produced by an overdose of cathartic medicine, as from the abstraction of a large quantity of blood.

If hectic symptoms have not commenced, sudorifics will be found highly beneficial in the case of irritable patients, as they do not tend to lessen their strength to the same degree as purgatives, and yet, at the same time, they diminish action and maintain the natural state of the secretions.

Opiates are highly essential, and are frequently available, not merely for allaying the irritability of the patient, but often for diminishing at the same time the local disease; and I have frequently witnessed in their operation an excellent example of the reciprocal influence of action and reaction on each other.

Topical remedies may also assist much in subduing the irritation arising from a local defect: hence the frequent employment of lotions for the purpose of lessening the action, either by cold or some other sedative property. Evaporating lotions are useful for the first indication, and preparations of lead for the second. Poultices, fomentations, blisters, and setons, may each in their turn be useful in certain conditions of local disease; but no general information can be given to enable you to decide by rule which is the fittest application: that knowledge is to be acquired only by a comprehensive view of the violence of action and the nature of the parts affected, as well as of the constitutional ability of the patient to support the effects of the means which may be employed.

I would earnestly caution you, gentlemen, not to mistake irritability for increased action and power, and so be induced to deplete when the soothing plan alone should be adopted. Seek for the cause of the constitutional derangement, and you will often find that the evacuation of a small quantity of matter confined by some inextensible structure will remove at once all the alarming symptoms which have resulted solely from its presence. This distinction

between irritation arising from a local cause, and that from an idiopathic tendency, is especially the province of the surgeon; and the readiness with which he recognises the difference, and discovers the "error loci," distinguishes him as conversant with one of the most important points in his profession. I have often witnessed these constitutional effects after surgical operations, and especially after the operation of lithotomy; and one illustration will be sufficient as a type of all such occurrences. After a patient has been submitted to the operation, and some hours have elapsed, and he has recovered from the shock, he may suddenly be seized with a violent rigor, which would lead to a supposition of its being premonitory to the formation of matter. The rigor will continue for some time, when suddenly a contraction of the bladder is felt, a large clot of blood is expelled, and the rigor immediately ceases. Being now perfectly aware of this frequent result from bleeding into the bladder, I always forewarn the attendants of the probability of the symptom, and so prevent alarm either to the patient or to those around him. Some surgeons introduce an elastic tube into the bladder after the operation of lithotomy, and leave it there, to prevent the liability to the result just mentioned; but I should think that the irritation of the tube was more likely to produce greater excitation than even the blood itself, and cannot, therefore, recommend the adoption of this plan.

I may finish the subject of Suppuration now, gentlemen, by begging you to remember that its presence is not always to be considered as an unfavourable symptom, as it sometimes indicates the existence of a restorative process; but that, under certain circumstances, and that always when the discharge of pus is profuse, that both constitutional and local means should be employed to modify and restrain its continuance.

AGE FOR MEDICAL STUDY.

By a Royal Ordinance issued in France, it is laid down that the years of study prescribed for candidates for the office of *Officiers de Santé*, shall henceforth only be reckoned from the period at which they have completed their sixteenth year. Some rule respecting age, in so far as the course of medical study at the hospitals is concerned, would be of great benefit in England and Scotland. Diplomas are granted to candidates at too early an age. So long as a man can become a physician or surgeon at the age of 21, the profession must continue to be overstocked.

CLINICAL LECTURE

GIVEN AT

ST. GEORGE'S HOSPITAL,

On June 22d,

By CÆSAR HAWKINS, Esq. Surgeon to the Hospital.

[Reported by MR. WALTER THOMSON.]

LECTURE VIII.

1. *False Aneurism in the Thigh.*
2. *Hospital Gangrene with Hemorrhage.*
3. *Medullary Disease of the Testis, and Abdomen, and Lungs.*
4. *Uterine Phlebitis and Secondary Abscess.*
5. *Suppurating Serous Cyst of the Neck.*

GENTLEMEN,—Before taking you to-day to the consideration of any fresh subject, I will again draw your attention to one or two cases upon which I have already made some observations, and which now present some new points worthy of your notice.

In the first place, you may remember that in my lecture of last week I spoke of two cases of hæmorrhage from wounds of an artery. In one of these cases, that of Henry James, in Oxford Ward, I told you that there was a false aneurism in consequence of a wound of some small artery at the lower and inner part of the thigh, and, from the notes for that day, you heard that the wound of the skin was becoming inflamed, and threatening to ulcerate into the cavity of the aneurism, an event which would of course have been attended with much hæmorrhage. My colleagues saw the case with me on the following day, as I told you I had requested, that being our usual consultation day. On this day, June 16th, the notes are, "No sleep, from the pain. Tongue dry and loaded. Heat of skin; slight shivering this morning. Bowels not open. Upon removing the strapping, little if any pulsation was felt. There was tenderness, redness, and swelling of the skin around the wound; the ulceration had spread and the sac was opened, and some fluid dark blood oozed out." The blood was small in quantity, and seemed to be only the contents of the sac half coagulated, and it at first appeared as if the inflammation had closed the opening in the artery so as to prevent any blood flowing from it, and, therefore, it appeared to us that there was then no necessity for performing the operation I had meditated. The wound was re-strapped, and some green dressing applied over it, but in less than an hour after this was done, fresh arterial blood flowed out, and it was evident that the wound in the artery was not closed, and that

the hæmorrhage was fresh from the vessel, and I at once endeavoured to secure it in the way I last week told you of. The notes tell us, "Hæmorrhage having come on, and effusion into the cellular tissue of the thigh increasing, it was determined to open the sac, and tie the artery above and below the wounded part. Accordingly, a director was passed into the external wound, and the sac laid open above and below to the extent of three or four inches. Coagula were found blocking up the internal wound, and on removing these a small wound was seen in the vastus internus muscle, which was enlarged." I found it was a very narrow punctured wound, and was situated so deeply that the account given by our patient of its having been done with a penknife could not be correct; and, upon questioning him, it turned out to have been a clasped knife. The notes go on to say, "After some time, on account of the difficulties occasioned by the coagula and muscular fibres, a ligature was passed under the artery, by which the upper end was secured; the lower end was tied afterwards with the assistance of a tennaculum." This difficulty you will always meet with, when you cut down into a part where blood has been effused for any length of time; the tissues get broken up and altered, and the blood oozing from among this mixture of coagulum, cellular tissue, and muscle, prevents your discovering the bleeding point. You see blood coming apparently from an opening, but upon examining this you find that it comes from beneath, and perhaps from a point at some distance. After the artery was secured all bleeding stopped, the edges being loosely brought together. The artery wounded was quite at the bottom of the puncture in the vastus internus, about two and a half inches from the surface, and it was divided for about two-thirds of its circumference. This is more especially the kind of wound from which secondary hæmorrhage is liable to take place. The state of parts discovered during the operation shows that the practice pursued was better than tying the main artery above, and the case has since gone on very favourably. I should have observed that the operation caused much pain, and I was obliged to administer thirty drops of laudanum immediately, and some Dover's powder in a saline draught every six hours. The next day the tongue was moist, cleaner, but still tremulous; there had been no shivering, and there was less tension around the wound. The notes also inform us that suppuration was commencing in the wound, and that it was filled with a dark brown fluid, probably pus and blood mixed. He has been going on well since. The ligatures separated yesterday without any recurrence of the hæmorrhage; neither has there been any tendency to sloughing or

inflammation about the wound; it is granulating healthily, and he seems likely to do well.

Another subject which I wish to bring under your notice, is that of Hospital Gangrene; a description of the various forms of which I gave you in my second lecture of this course; at a time when some examples of it first appeared in the wards. It has, unfortunately, occurred in several instances since, and some of the patients under the care of my colleagues have been in much danger. Of my own immediate patients, one only has been affected to any great extent, a boy named George Williams, in whom some sloughing took place, connected with a scrofulous abscess over the os calcis, and also around a lancet puncture I made just above. Part of the bone was exposed by the ulceration, but in a few days the unhealthy process was stopped by the same treatment which you have seen do very well in the earlier cases, namely, opium and ammonia, with latterly bark internally, and conium and lead lotion locally. He is now doing well.

This case was of the same character as those I before brought before you,—that is to say, it was a case of sloughing phagedæna. But you may remember that I told you that the term hospital gangrene included the form of unhealthy action in which the destructive process took place by sloughing alone without any phagedænic ulceration. An instance of this form of the disease, the only case I believe which has occurred here, you have now in a patient in Wellington Ward, in whom, however, the disease did not make its appearance while she was in the hospital.

The patient to whom I refer, Emily Burley, is one of the patients of whom I spoke to you last week, as having had a wound of the superficialis volæ, or of a branch of it, which caused much bleeding, but was quickly stopped, however, by a ligature placed upon the two ends of the artery at the wounded part by the house-surgeon. She went on well, and left the hospital on the second day after the accident, at her own desire. On June 19th, however, ten days after she went out of the house, she was readmitted, and the notes for that day describe her state thus.

"The forearm and hand cedematous from a compress and tight bandage which had been applied to the brachial artery before her admission, to stop some hæmorrhage from the wound. The hand was red, and there was a large sphacelated mass of the size of a crown-piece, occupying the situation of the old wound, but extending down to the wrist and back of the hand. Skin around red and tender, and some redness extending up the forearm.

"She was prematurely confined of a six months' child on the 13th, no unfavourable symptoms having been since present. The

wound continued to go on well till the 17th, when the edges were observed to be black and the discharge offensive, and the hand was benumbed. Mortification gradually extended up to the time of her readmission. Bleeding from the wound to the extent of about half a pint took place in the morning, a few hours before she came in."

The textures around the wound were, as you saw, exceedingly soft and puffy, and there was a swelling of the slough as it were, by the infiltration of serum, and the case presented a very good example of the rapidly spreading gangrenous sore. In the former lecture I drew your attention to the great efficacy of the local application of nitric acid in stopping the unhealthy process in these sores. The cases at that time in the hospital had more of the character of phagedæna, and I believe no case has been severe enough to require the use of the acid. But in Burley it was evident that its immediate application was necessary to stop the rapidly spreading gangrene. I accordingly applied it by means of a stick to the surface of the slough, to the parts beneath, and to the edges of the surrounding skin. It did not produce much pain, but I gave her a dose of laudanum immediately after, and put her upon the use of the haust. cinchona and carbonate of ammonia. In applying the acid below the slough it was found that the previous gangrene extended deeply enough to destroy several of the tendons, and that it had also opened the joint of the thumb. On the next day the notes are, "Slept at times during the night, the laudanum having been repeated about 10 P.M. Gangrene not extending. Discharge profuse and sanious. Some can be squeezed from the external border of the forearm for about an inch and a half towards the elbow, in the situation of the redness and tenderness noted yesterday." The cellular tissue was, in fact, dead to that extent. I was obliged freely to lay it open, and found the surface of the radius exposed for some distance. "There was but little pain complained of. Pulse 132, sharp and weak. Tongue clean, rather dry. Bowels open yesterday." The nitric acid had in short effectually stopped the sloughing process, and there has been no opening of the ulceration since. There is only one spot to-day which looks sufficiently dark to make me apprehend a return, though I need not tell you that it may recur in any part of the wound, notwithstanding its present healthy appearance. Everything seems going on favourably. She has borne her diet well, consisting of the usual ordinary diet of the hospital, with five ounces of wine, and has expressed a wish for some porter, which I have allowed her to have; she has lost her anxiety of countenance also. Here, then, is the only instance you

have had presented to you, of the gangrenous form of hospital gangrene; and in it you have seen the very salutary effects of the strong nitric acid, both as regards the sore in causing the cessation of the sloughing process, and as regards the constitution in the improvement of the health consequent upon that cessation; and should the ulcer again take on the same character, recourse must be again had to the same remedy.

With regard to the hæmorrhage which occurred, it is possible that it might have been from the artery which was tied upon the separation of the ligature. I think, however, that it is more probable that its real cause was the opening some small vessels by the sloughing process. You perceive that there has been no return of bleeding, which there probably would have been, after all the disturbance the wound has undergone, had the hæmorrhage proceeded from the imperfect closure of an artery of any magnitude. The tourniquet, which checked the bleeding before her admission, was directly removed, and has not been employed since; the wound has been left open and exposed, because pressure would have been likely to increase considerably the swelling and inflammation of the gangrenous sore, and the nitric acid has been sufficient to prevent a return of the hæmorrhage by the consolidation it effects in the living tissues of the part. This case shows us that the disposition of wounds and ulcers to take on an unhealthy character still obtains around the metropolis, and that it probably depends upon the same condition of atmosphere which has caused other low forms of disease and fevers of a low type to prevail so extensively. It shows you also another point, namely that the gangrene was not owing to the hospital air, since the wound, which was quite healthy when she left us, took on the gangrenous ulceration some days afterwards while she was at her own home.

I will take you now to another case of which I spoke in my last lecture, and which has unfortunately not done so well as was expected; the case of James Wild, whose testicle I removed, and in my remarks took occasion to speak of the little risk there was of any ill consequences immediately following the operation. He was going on very well at the time of the lecture; but two days afterwards a change occurred: on the 17th, the notes are, "shivering last night at 7 o'clock. Nausea, some pain in the abdomen. Fulness of right side below the ribs. Wound healthy, discharge less. Pressure on the abdomen causes no pain. Tongue white. 2 P.M. Has vomited a large quantity of brownish yellow fluid." In short, he had a complete attack of peritonitis, beginning in a very low form of the disease, so that at

first there was no tenderness of the abdomen; then tenderness came on, but without tympanitis. Thus, on the next day, "Pulse feeble. Nausea in the morning. Breathing hurried. Skin hot. Tongue dry and loaded. 1 P.M. Sickness, with vomiting of yellowish brown fluid. Wound healthy. Shrinks from touch on the right side of the abdomen—no tympanitis. Has not passed any water since midnight; a catheter was passed, and about half a pint of dark-coloured ammoniacal urine drawn off. Countenance yellow and anxious. Slept pretty well." He continued to sink, and died on the night of the 19th, so that the disease carried him off in little more than forty-eight hours after the first occurrence of the symptoms. So rapid a progress gives us no time for the employment of any remedies likely to be successful in arresting its progress; I will not therefore trouble you by recounting the means used. I have placed upon the table some of the parts removed, for the purpose of showing you the appearances found at the post-mortem examination. Here is an encephaloid tubercle which was found in the left lung, and you see that it is exactly the same in structure as the mass of disease in the testis which I removed. The lung around, you will observe, is perfectly healthy. In the right lung two tubercles were found similar in structure and apparently surrounded by cysts, and entirely isolated from the substance of the lung. That on the left side is not so isolated, and appears as if a portion of the lung were changed into the new formation. From a consideration of these circumstances you will perceive the reason of the absence of any signs of their existence during life. The tumors were small, and the unaffected part of the lung being perfectly healthy, no obstruction was offered to the carrying on of the respiration. The largest tumor also was situated beneath the sternum, an additional reason for its remaining undiscovered. In the abdomen were found all the morbid appearances usually produced by peritonitis of a low type. Pus was found in large quantity collected in the pelvis. There was no effusion of lymph, nor any increased vascularity nor adhesions of the surfaces of the viscera together, but purulent fluid alone was found,—an abscess, in fact. The cause was obviously the existence of this tumor, which I know place before you. It is formed by a malignant enlargement of the lumbar glands, and is, as you see, about the size of a goose's egg. It was situated on the lower lumbar vertebrae, having the aorta and vena cava in some measure adherent, but pervious. In a case I mentioned to you in one of my earlier lectures on this subject, these vessels were found imbedded in a mass of disease of this nature, and the vena cava quite ob-

structed. Had the case now under consideration gone on to a further stage, it is very possible that the same change might have taken place in it also.

The question may occur to you, how far the operation might have been concerned in hastening the patient's death. The sudden increase of a tumor of this nature may give rise to peritonitis, independent of any operation being performed. You may remember a patient under the care of Dr. Nairne a few months back. His testicle, affected with encephaloid disease, had been removed from the inguinal canal, it not having descended into the scrotum. Six months afterwards he had an attack of peritonitis similar to that of our patient. He had at the same time acute pain in the leg, extending over the whole limb, with great swelling and oedema, these symptoms depending upon the interference with the return of venous blood from the limb by phlebitis of the iliac vein. He recovered from the peritoneal attack and left the hospital, but died some time afterwards, and at the post-mortem examination Mr. Hewett found a large mass of malignant disease occupying the situation of the lumbar glands. Yet, although peritonitis may make its appearance in a patient upon whom no operation has been performed, or at a distant period after such operation, I cannot but think that it was in our present case in some way connected with the removal of the tumor. You will observe that the lumbar tumor was not satisfactorily discovered before his death, although you may remember that I hinted at the probability of one existing, from involuntary resistance made by the abdominal muscles to pressure on the abdomen. Had a tumor of the size of the one before you been there before the operation, we could hardly have failed to have discovered it, but there was not sufficient proof to deter us from the operation. It seems not unreasonable to suppose, the tumor being situated in the absorbent glands, and considerable suppuration going on in the scrotum and about the cut end of the cord, that the lymphatics of the cord taking up some of the pus, and conveying it to the glands, might have produced so much irritation, as to cause a rapid enlargement of the tumor already existing, and so have given rise to the inflammation of the peritoneum which has terminated in his death, and such I believe to be the fact in such cases; and in one which was fatal like this from peritonitis, the tumor became in a few days of immense size from numerous cysts, though not perceptible before the operation.

There was another point of considerable interest connected with the question of the propriety of performing an operation in this case. This was the existence of a tumor in

the breast, with the exact nature of which we were unacquainted. After his death I examined it carefully with the microscope, as well as the breast of the opposite side, and I could perceive in the affected side not the slightest trace of malignancy. It was in fact just the kind of tumor you often find in the male breast, particularly in young men, partly fibrous, and partly hypertrophy of the glandular structure.

In the case of the woman with the gangrenous sore on the back of the wrist, of whom I just now spoke, there is a circumstance to which I might have drawn your attention. She had a premature confinement a few days previous to the commencement of the gangrene. It is not improbable that the loss of blood and depression consequent upon this may have been the chief reason for the sore taking on an unhealthy character, and it also forms an unpleasant addition to it. The uterus, in weak persons, is likely to inflame after parturition, and gives rise to phlebitis, which is always attended with much risk. This is the more likely to take place from the state of health she is in. It is now, however, some days since her confinement, and she has not yet presented us with any symptom, so that I hope she may escape.

There is a case in the hospital forming a very good example of the state a patient may be left in after phlebitis of this nature, and is worth looking at, as it is an instance of recovery from the disease, which is a rare circumstance when it has gone to the extent that this has done. Elizabeth Dawson, set. 41, was admitted into Hudson Ward, on June 2d, with, as the notes tell us, enlargement of the femur, partial ankylosis of the patella to the tibia and femur; pain on pressure of patella; no pain on pressing together the articulating surfaces of the femur and tibia. There is a small opening above the joint discharging synovia, which can be pressed out, and a large cavity extending three or four inches up the thigh, apparently full of synovia. In fact, the joint is no doubt completely disorganized, and although perfect ankylosis has not at present taken place, it must do so if she is to get well. When she was admitted there was an opening connected with the joint and with an abscess extending some way up the thigh under the vastus internus. This has since closed. There is another opening now existing in the ham, and this is no doubt also connected with the joint. She has besides phthisical symptoms, but they have no connection with the point we are now considering. The history she gives is as follows:—She was confined six months ago. Four days afterwards she had great pain and tenderness over the uterus, lasting for a week, and relieved by

fomentations. The usual discharge ceased. The knee soon began to swell, and there is some obscure history of a fall out of bed six weeks after her confinement. Abscesses formed skin-deep on the back of the left hand and shoulder about the same time with the swelling of the knee. The whole leg was very much enlarged, while the knee was swollen. She had very severe darting pain in the knee, with starting of the limb at night. The abscess in the knee burst two months ago, and discharged purulent matter for six or seven weeks, and has been discharging synovia since. Here, then, is a very clear history of inflammation of the uterus after delivery, followed in six weeks by abscess of the knee-joint and secondary abscesses in other parts of the body. She may retain her life, but at the expense of an ankylosed joint, and the phthisis makes even this very doubtful. By far the greater number of these cases of phlebitis and secondary deposits are fatal; I have therefore directed your attention to it as a rare instance of recovery.*

The next case I will bring before you is that of Thomas Mayall, set. 33, who was admitted on June 2d with a "tumor on the right side of the neck, of the size of a large lemon, extending from the ear to the clavicle, covered in front by the sterno-mastoid muscle. The vessels are pushed to the front and inside. Fluctuation can be perceived, and there is some little pain at the upper part. I examined the tumor with a candle, to see whether the fluid was transparent, and I found that it was not so. I then punctured it with a grooved needle, in order to ascertain exactly the nature of the fluid. Finding that it contained serum and pus mixed, instead of either fluid singly, I allowed him to remain quiet for a few days, instead of proceeding further with it, as opening these kind of abscesses is more likely to be followed by a bad kind of inflammation, than the opening those containing more proper pus. On the 7th, however, I did open it behind the sterno-mastoid muscle in the part where it was most accessible, and evacuated about half a pint of the same sero-purulent matter. The history he gives of it is, that "it commenced six months ago; and, when he first perceived it, it was about the size of a walnut. Has had no pain, nor rigors at any time."

I mention this case because it is not clear what was the cause or origin of the abscess. It is not common to have abscesses form in the cellular tissue of the neck, unless they are of an acute character. You may remember a little girl very recently in whom a large abscess formed in this region in con-

* The patient has since left the hospital well.

sequence of a blow. It was punctured, and she went out cured in a few days. Occasionally, also, I have seen abscesses form here without any preceding injury, but then they have been acute, and have been attended by the usual symptoms of inflammation; but here there has been an absence of all signs of inflammation, except pain to a very trivial extent, and there was not the least thickening around, and there is no redness whatever. The reason of my examining it with a candle was, that serous cysts form here, and are sometimes quite transparent. I cannot but think that the abscess in our patient was owing to suppuration in a cyst of this nature. I can find no other reason for its formation, and the fluid let out was just of that thin sero-purulent character which such cysts present us with after inflammation. When you have a simple serous cyst, opening it and inducing the suppurative process by seton or lint is a very good means of obliterating it, and supposing that suppuration has taken place in one of these hydroceles, what I have done for it may effect a cure. The notes for the 21st are, "an opening made at the base of the tumor, about an inch in length. A piece of linen passed through as a seton; a small artery was divided." This or some kind of seton is necessary, because letting out the matter alone will not suffice to obliterate the cavity. The cyst under the sterno-mastoid muscle cannot contract, and the movements of the neck prevent its closing. In this situation, too, pressure cannot be applied on account of the windpipe, though it is a means sometimes effectual in other situations in inducing adhesion of the surfaces of the cavity. In order to make the second opening I passed a director into the posterior opening of the sac, and caused it to project at the inner edge of the sterno-mastoid. I found the cyst very thin and shining, another reason which makes it probable that it originated in the way I have mentioned. Had it been simply a chronic abscess you would expect to find more or less hardness around the cyst; or, at least, some adhesion to the platysma myoides; but the thin cyst was quite insulated. Having punctured the cyst a second time, then, I passed a piece of lint from one opening to the other. Should this produce too much inflammation, so as to make it necessary for me to remove it, I shall have to take great care that the openings do not close, as they would be very difficult to keep open in the skin, though the centre will not heal on account of the contraction of the muscles. The effect of the seton is to cause the cyst to contract till nothing more is left than a sinus, and when it has got to that stage the seton may be withdrawn, and the sinus

gradually heals. The method of cure is troublesome, but you will generally find it successful in these serous cysts.*

Original Communications.

ON SOME POINTS IN THE PATHOLOGY AND TREATMENT OF TUBERCLE OF THE LUNGS.

By WILLIAM HERRIES MADDEN, M.D.
Physician to the Torbay Dispensary, Torquay,
Devon.

[Concluded from p. 462.]

SUPPOSE, then, that we have come to the conclusion that our patient is affected with phthisis in its slow, or atonic form, to what should our treatment be directed? Clearly to the removal, as far as may be, of that condition which has given rise to the tubercular deposits, to the restoration of the general health, and to the prevention of all irritation of the pulmonary organs. This last is of peculiar moment; for a tuberculated lung is especially liable to take on excited action under the influence of very trivial causes, and a few hours of inflammation will do more mischief, and give rise to the deposition of a larger amount of tubercular matter, than would have been formed in months of the ordinary progress of the disease. It is essential, therefore, that the closest watchfulness should be employed, and that the first symptoms of pulmonary irritation should be at once met, and combated by those means which experience has shown to be most useful for the purpose designed—local bleedings and blisters to relieve congested vessels, nitrate of potass to dissolve the excess of fibrin, antimony, ipecacuanha, &c. to promote exhalation, and restore the disturbed balance of the circulation.

But, while using these measures, we must carefully avoid losing sight of the great fundamental fact, that the disease with which we are concerned is a disease of debility, and that our

* There was some time afterwards a little extension of the inflammation, and the linen was changed for two threads of silk, which were finally withdrawn in the beginning of August, and the sinus then perfectly closed.

only rational hope of securing a permanent and substantial improvement rests upon the possibility of giving tone to the vital energies, and rousing the system at large to more healthy and sustained activity. To seek for *specifics* appears to me a mere waste of time; in every age we have had many of these boasted infallibilities, each professing to do more than its fore-runners, and each, after dazzling the expectant multitude for a time by its meteor-like course, sinking into the darkness of merited oblivion. The more I see of phthisical disease, the more I am convinced that, though we have assuredly certain fixed general principles to guide us, each case that comes before us must be judged of separately, and treated on its individual merits. What will do good in one will prove inoperative or injurious in another; and if we remain contented with giving a name to the malady, and then pursuing a regular routine of practice, we shall neither deal out justice to our patient, nor contribute to our own professional reputation. The man who gives iodine, or naphtha, or cod-liver oil, to every consumptive patient who comes under his care, without any regard to the peculiar type of the disease, or the special characteristics of the sufferer himself, is as much a charlatan as he who cures all maladies with one universal medicine, or heals all forms of external disease by the one same greasy application.

I do not mean to deny that the remedies I have named are useful; on two of them I set the very highest value; it is the indiscriminate use, in reality *abuse*, that I condemn. Medicine will never take its true position as an acknowledged science until more philosophic rules are commonly adopted.

We all remember the flourish of trumpets with which naphtha was introduced to our notice; the healing cavities paraded before us; the consolidated lungs become permeable; the emaciated frames grown fat. It was all most captivating; and, in common with many of my brethren, I was induced to give it a fair trial. But, for some reason or another,—perhaps because I was not the discoverer,—it would not answer in my hands: phthisis proved still intractable, and I could only see that it served the purpose of a

diffusible stimulant, and a vastly less pleasant one than sulphuric ether.

The powers of *iodine* as a remedial agent in scrofulous diseases generally, are too well known to require comment. I have certainly seen it do good in consumptive cases, and have noticed decided improvement in many of the symptoms under its use; but, upon the whole, I think it works more beneficially in cases of external than of internal tuberculosis, and it is often contraindicated by the irritable condition of the gastric and intestinal mucous membranes.

The various preparations of *iron* will often prove of signal service; indeed, there is scarcely any remedy of the tone-giving class from the employment of which I have derived such satisfactory results. I regard this mineral as one of our standard appliances, and find very few patients who cannot bear it in one form or another, care of course being taken that it is only administered in such states of the system as warrant the use of the class of drugs to which it belongs. A very elegant and agreeable preparation is made by dissolving the proper quantity of the ammonio-citrate with ʒiiss. or ʒij. of the Liq. Ammon. Sesquicarb. in a bottle of Schweppe's lemonade: a wine-glass of this to be taken two or three times a day. If carefully made, the briskness is retained to the last, and the unpleasant styptic taste is in a great measure concealed.

My experience of *cod-liver oil* is extremely favourable. I have seen the most marked improvement follow upon its steady employment; the cough becoming less troublesome, and the expectoration less copious; the appetite better, and the emaciation arrested, and even a decided and manifest increase of flesh taking place in many cases. That it will *cure* consumption I do not say, but that it is most efficacious in bringing about a more healthy general condition of body, in which nutrition is carried on more satisfactorily, and the morbid deposition is, for a time at least, greatly checked, I feel I am warranted in affirming, from the result of many trials, both in my own practice and in that of my friend and partner, Dr. Battersby, to whose kindness I am indebted, for the notes of the following cases. I am prevented

from making use of those which fell under my own immediate care, by having unfortunately neglected to keep a record.

CASE I.—“Mr. J. F., æt. 30, sanguine temperament, and occupied in superintending a manufactory, had enjoyed excellent health until about two years ago, when he strained his back. Since then he has never felt so strong or well, although he could not say that he had any decided illness. About the end of last September (1845) he caught cold, owing, he believes, to exposure to extremes of temperature in the factory: this was followed by inflammation of the lower portion of the left lung, and severe cough. Soon after, the upper portion of the same lung became affected, and in January 1846, when he came to Torquay, there was a considerable tubercular abscess in that part, and he was suffering from frequent and severe cough, profuse night perspirations, hot skin, loss of appetite, constipated bowels, &c. and was much emaciated. Shortly after he had an attack of hæmoptysis, which frequently returned in a slighter degree. Having subdued this by the ordinary remedies, I put him on a course of cod-liver oil, which medicine he has continued to take until the present time (April 30th), a period of two months. Under this treatment the cough has nearly disappeared; the dyspnoea on walking up hill, which had formerly distressed him, has been greatly diminished; there is little or no expectoration; no night perspirations nor pain in the chest; his appetite is very good; bowels regular; pulse 72; tongue clean; and he has increased 19lbs. in weight, having, in fact, regained all he had lost during his illness. The disease in the lung appears to be quite arrested, but there is as yet no sign of the cavity becoming obliterated.”

This appears to have been an instance of pneumonic phthisis. Some might, perhaps, from the history, be inclined to doubt the existence of tubercular disease, but the extreme rareness of abscess as the result of simple pneumonia, and the perfect certainty that there was a cavity in the apex of the left lung, remove all hesitation from my mind on this point.

The last accounts received of Mr. F., during the past winter, were quite favourable.

Regarding the next case there cannot be two opinions.

“CASE II.—Miss W., æt. 20, has lost her mother and four sisters from phthisis. Her illness commenced about a year and four months ago, as an ordinary cold and cough, which continued for three or four months, when she had a very severe attack of hæmoptysis, which lasted for some weeks, and of which she has had frequent returns. During all this time her cough never ceased, and she lost flesh and strength. After being for three months under Dr. Ramadge's care, she, in Jan. 1846, consulted Dr. C. J. B. Williams, who sent her immediately to Torquay. She was at this time greatly emaciated; had frequent cough; profuse expectoration; night perspirations; hectic, &c.; slept very badly even with morphia; appetite bad; pulse 130. Catamenia have not appeared for four months; bowels irregular. The upper part of left lung much diseased, and a little below the clavicle is a cavity of some extent. She is unable to lie on the left side in consequence of the violent coughing that posture induces.

“After having made trial of the ordinary remedies without much benefit, about two months ago I commenced cod-liver oil in small doses, which have been gradually increased to 3ss. ter die, and continued until about a fortnight ago, when I ordered effervescing citrate of iron instead.

“April 30th.—Present state. Looks fat and robust; sleeps well without any sedative; has had no night perspirations for some time; great improvement in her appetite; eats two eggs daily for breakfast; cough almost gone; bowels regular; tongue clean. She used to suffer much from pain in the stomach after meals; this has now quite gone. The catamenia appeared a few days ago, after six months' interruption.”

In the two next cases the disease proved ultimately fatal, but the beneficial operation of the oil was in both most marked. The progress of the malady was evidently arrested for some time, and the comfort of the patients

greatly enhanced by the amelioration of their worst and most distressing symptoms.

"CASE III.—Mrs. B., æt. 26, fair complexion, enjoyed good health till after marriage, and attributes the commencement of her illness to the debility caused by repeated miscarriages, of which she has had 14. Had a severe cough 18 months ago, which has continued with more or less severity ever since. About twelve months back had an attack of hæmoptysis, which returned for eight months, about a week previous to each catamenial period. Saw Sir J. Clark last June, who considered her case so hopeless that he dissuaded her husband from taking her to Madeira. Came to Torquay in the following September. At that time the right lung was extensively diseased; there was a large cavity in the upper part, and the chest had become much flattened over it. The pulse was very frequent; no appetite; little sleep; night perspirations, and profuse purulent expectoration. She was unable to lie on the right side; bowels regular, as also the catamenia.

She improved a little at first, under the use of naphtha, but this did not continue long: the catamenia became irregular, and, after February, did not return: she had slight hæmoptysis occasionally, lost flesh and strength, and the disease began to make a rapid progress.

About three months ago, I commenced giving cod-liver oil, which she still takes. Present state, May 1st, 1846.—Thinks that for the last month she has decidedly improved in strength and flesh; has still slight perspirations at night; the catamenia returned last period; the cough is less troublesome, and the expectoration (which has still the same character,) is not now the fourth part of what it had been. The appetite is also improved, but this may in part be attributed to small doses of quinine, which I have lately given in addition to the oil: the right lung is almost entirely disorganised, but the left still remains free from disease."

This lady returned to Torquay last winter, and died rather suddenly of hæmorrhage on May 20th, 1847.

"CASE IV. Master C., æt. 16, very

strumous, has lost three brothers and sisters from phthisis, out of a family of five: dates the commencement of his illness from November, 1844, when he had an attack of bronchitis; this was followed in January by hæmoptysis, which was very profuse. His cough continued, and in July, 1845, he consulted Dr. Chambers, who sent him here. Previous to going to London, he had suffered from ague in June; but this had been relieved before he left Lincolnshire, although not quite cured. On his arrival here, the left lung was considerably diseased; there was extensive dulness and flattening of the chest under the left clavicle, extending to the nipple, and tubercular softening had commenced: this soon led to the formation of a cavity.

During the winter, he had repeated attacks of hæmoptysis. The disease extended to the right lung; the expectoration became profuse and mucopurulent; his appetite failed; night perspirations became very profuse, and he fell into an apparently hopeless state. In addition to this, the ague returned, and though it yielded, after some time, to quinine, a feeling of chilliness and discomfort continued to distress him, at regular intervals, for weeks afterwards.

Being greatly urged by some foolish friends, and seeing that the usual remedies failed in arresting the disease, his mother was prevailed on, in February, to try homœopathy, and he continued under this treatment for a month, without any improvement, the disease advancing with even greater rapidity. At this time, another attack of hæmoptysis came on, and he was again put under my charge. After subduing the hæmorrhage, I determined to try cod-liver oil, and began with small doses, ʒi. t. d., which were gradually increased to ʒss. This remedy he has continued to take for upwards of three months and a half, during which period there has been a steady improvement in his general health: the night perspirations have totally ceased; his appetite has returned; the cough has been much less troublesome; he can lie on either side; and after having been confined to the house for upwards of five months, and a great portion of that time to his bed, he is now able to take advantage of the

warm weather, and walks or takes a short ride daily. During the use of the oil, his tongue has been remarkably clean, and he has required no aperient medicine; the bowels, which before had acted irregularly, performing their functions quite naturally.

June 15th, 1846.—Respiration is more audible in both lungs, especially the right; there are no mucous râles, and he can take a longer and deeper breath than at any occasion when I had previously examined him. The voice is resonant under the right clavicle, and pectoriloquy very distinct on the left side, midway between the clavicle and nipple; the voice being generally more resonant all over that side, and the respiration less distinct and audible.

He died suddenly, October 9th, 1846.

These are but specimens: they are not brought forward to support the idea that the medicine in question is an infallible cure for phthisis; but simply to illustrate what we have ourselves seen of its action, and to demonstrate some of the grounds for the assertions I previously made. That it is an unpleasant remedy, there can be no doubt; but patients soon cease to complain of its nauseous taste; and when care is taken not to give it in large doses at first, I have rarely seen it disagree with the stomach. I prefer, if possible, giving the oil unmixed, —simply floating on a little water, or aromatic water; but when there are objections to this, it may be administered as an emulsion, rubbed up with a little *pâte de Guimauve*, and flavoured in any way that is most palatable. An emulsion with liquor potassæ is, I think, objectionable; the properties of the oil are changed, and it is far from certain that its efficiency is not also damaged.

Gorton, Torquay, July 1847.

VACCINATION AND SMALL-POX.

M. VAN BERCHEM, from his researches on Vaccination and Small-Pox, has come to the conclusion that, among the vaccinated, the older the individual, the greater is the liability to an attack of small-pox. Among the unvaccinated, it is the reverse; for the younger the person, the more he is liable to an attack of small-pox.

CASE OF ABSCESS FOLLOWING PREGNANCY.

By W. H. HOLMAN,
House-Surgeon to the Backs Infirmary.

ELIZABETH STRATFOLD, æt. 29, silk-weaver, presented herself at the Infirmary in June last, with a swelling in the right iliac region. She then stated, that previous to her confinement, which took place on the 14th of March, her health had been good, but that the bowels had been generally costive during the latter months of pregnancy. The labour, which was of nine hours' duration, was natural, and she went on very comfortably for a fortnight, when she was attacked with pains in the limbs, diarrhœa, profuse perspiration, &c., which were relieved by the medicines prescribed. However, about a month after the delivery, she was attacked with frequent vomiting, inability to take anything but a small quantity of broth, and pain in the right iliac region, with a sensation, as she expressed herself, of something growing in her inside, and on directing her attention to the part, she found a swelling of the size of a walnut. This, and the above symptoms, she was told by her friends arose from weakness, and she continued to walk out a short time daily, but as the swelling grew larger, and profuse perspirations alternating with chills, and great emaciation, took place, she determined on applying at the infirmary. Accordingly on the 2d of June she was admitted as in-patient, under the care of Mr. J. H. Ceely, and on examining her the following symptoms were found:—

In the right iliac region a large indurated swelling, about five inches in diameter, painful on pressure, but with no external redness; great emaciation; tongue dry and furred, and all the symptoms of extreme debility, with rigors, followed by profuse perspiration. — Cataplasma Lini. Ammoniaë Sesquicarb. gr. v. ex Mist. Camph. ʒj. 4tâ quâque horâ sumend. Pil. Sapon. C. gr. v. o. n. Milk-diet, and a pint of beef-tea.

4th.—Has been much relieved by the application of the poultice, and has passed a more comfortable night than she has lately. Bowels have not been

acted upon since her admission.—*Ol. Ricini*, $\mathfrak{z}\text{ij}$. *statim*.

8th.—Continues much about the same, the bowels not acting except on the administration of castor oil.

9th.—Pain and extreme debility still continue, but the profuse perspirations are slightly diminished. To take four ounces of wine daily. *Cont. Mist. cui adde Træ. Cinchonæ*, $\mathfrak{z}\text{ss}$., *et Træ. Opii*, $\mathfrak{m}\mathfrak{x}$.

She continued about the same, except that the swelling appeared to become more circumscribed and prominent, and the pain slightly increased, until the evening of the 14th, when the abscess broke, and discharged a large quantity of thin foetid pus from a small opening about an inch and a half above the anterior superior spinous process of the ilium.

15th.—Has passed a more comfortable night, but the discharge of pus is so great, that the applications are required to be renewed every hour. To continue the wine, and to have in addition a pint of porter; also milk-diet, and a pint and a half of beef-tea, and to continue the sesquicarbonate of ammonia.

17th.—The swelling has much diminished in size, and she appears better in health. Bowels have not been opened since the 14th, and but a small quantity of feculent matter has passed by the opening. To take *Ol. Ricini*, $\mathfrak{z}\text{j}$. *statim*, *et rep. altern. mane*.

18th.—The bowels have been acted upon to-day, and pus has passed with the feces. The discharge is much diminished, and of greater consistence, requiring the poultice changed merely night and morning; all sickness abated, and she begins to take her diet with a relish.

20th.—The discharge from the wound has ceased altogether, and the opening closed up. I should mention, that since the abscess has burst she has lain on her back with her knees up, supported by a pillow beneath the hams. The bowels are opened after each dose of the castor oil.

22d.—She is become a little stronger, and the perspirations have disappeared. The induration around the opening is much diminished. To take meat, 2 oz., with a pint of beef-tea daily, with the milk-diet as usual.

28th.—The bowels are now opened regularly once a day, and without any

admixture of pus with the feces: much improved in health. To take full diet (which consists of four ounces of meat and sixteen ounces of bread), with half a pint of beef-tea. To continue the porter and wine. To leave off the castor oil and the ammonia, and take *Quinæ Disulph. gr. ij. ter die*. To sit up in bed, and to wear a bandage with a pad, as in case of hernia.

July 27th.—She had become much stronger, and able to get up, and had omitted the wine, when she was attacked with erysipelas of the face, which, however, disappeared in a few days after the administration of an emetic of ipecacuan and ammonia, followed by continued doses of ammonia and tincture of bark.

Aug. 4th.—The attack of erysipelas left her in a very depressed state, and recourse was again had to the wine, which was to-day omitted, and she was ordered in lieu thereof full diet, with meat for breakfast; and *Træ. Ferri Sesquichl. $\mathfrak{m}\mathfrak{x}\mathfrak{x}$. ex Inf. Quassia ter die*, instead of the ammonia.

She then gradually became stronger, and able to walk in the grounds of the Infirmary, and on Aug. 18th was discharged cured.

ANALYSIS OF THE LYMPH OF A HORSE.

AN analysis of the lymph of a horse has been recently instituted by Geiger. It was collected from a small crack beneath the fetlock of the hind foot, which emitted a large quantity of the fluid in an apparently normal state. It was of a pale yellow colour, of a sickly odour, slightly saline taste, neutral, and had a specific gravity of 1017. After standing for some time, a gelatinous trembling coagulum was produced; the serum beneath it being perfectly clear, of a faint yellow colour, and, when examined under the microscope, containing only very few corpuscles.

On analysis, this lymph was found to contain—

Water	983.7
Solid constituents	16.3
Fibrin	0.4
Albumen	6.2
Extractive matter.	2.7
Fixed salts	7.0
Fat and ammonia salts.	traces.

The corpuscles contained in the fluid were none of them so large as blood-corpuscles; they had a granular appearance, a well-defined outline, and many exhibited a decided nucleus. Some were perfectly round, others elliptical. There were no traces of fat-corpuscles or of red blood-corpuscles.—*Dr. Day's Report on Chemistry, 1847.*

THE SCOTCH EPIDEMIC FEVER OF 1843-4.

By JOHN RICHARD WARDELL, M.D. Ed.

Late President of the Royal Physical and
Hunterian Medical Societies,
Edinburgh; &c. &c.

[Continued from page 466.]

THE abstraction of blood in the seven days' fever, though sometimes had recourse to, was not attended by those decided advantages which appear to have been the case in the epidemic of 1817-20. It is true that the intense headache which there was would be relieved by a full depletion, but this alleviation would be only for a brief period; the pulse again rising, and the uneasiness and pain complained of becoming as great as ever. The copious diaphoresis which invariably determined the critical period lowered the pulse as effectually as blood-letting, and such reduction was permanent, nor were there those apprehensions of visceral lesions, accompanying a high pulse in other forms of fever, which usually warrant the aid of the lancet. In certain cases of the young and plethoric with strong fibre and unbroken constitution,—when the pulse was full, forcible, and quick—in fine, where there seemed present a train of indications demanding abstraction, venesection did not produce those benefits which might have been anticipated; where, however, there was acute complication, its use was unequivocal and decided. On reference to the statistics, it will be seen that, in Table No. V., out of 80 cases, 7, or 1 in 11·42, were bled from the arm; in Table No. VI., general blood-letting was adopted in 19 out of 450 cases, being 1 in 23·7; in Table No. VII., out of 40, 5, or 1 in 8; and in Table No. VIII., out of other 80 cases, only 4, or 1 in 20, were bled. Thus, out of an aggregate of 650 patients, in only 35 was general blood-letting employed, being but 1 in 18·56 of the whole number,—a fact proving that the type of the distemper was not inflammatory. Comparing these with the statements of Dr. Welsh, the difference will at once be apparent. That author details particulars respecting 16 patients whom he treated most heroically, the

average amount of blood taken from each of these being 85·4 oz. and the average number of leeches applied was 15, and one man was bled from the arm seven times. Out of fifty other cases, thirty-four were bled from one to four or five times, and the quantities taken at each operation varied from ten to thirty ounces. These particulars are cited to show the great dissimilarity in the treatment, and of course in the nature of the two epidemics, corroborating what has been said on this point. Dr. Welsh, like all other men who espouse a particular theory, carries his doctrine to an extreme, by so urgently recommending the abstraction of blood in fever as a sovereign remedy. Observation and facts incontrovertibly prove the fallacy of such sweeping conclusions, and assure us that such practice cannot at all times, and under all circumstances, be pursued with like success. In my own humble opinion, reasoning from my experience in the seven days' fever, as well as from other types of the disease which have come under my notice, as also from the accounts which are given of febrile visitations in recent times, the following conclusions are deducible—viz. 1st. It is always important to carefully study the particular nature of the prevailing epidemic, cautiously ascertaining by what effects depletion is followed. 2dly. The class of individuals placed under our care, their previous modes of life, habits, and the external influences to which they have been exposed. 3dly. The age, sex, and temperament of the patient. 4thly. The kind of complication, the particular organ or tissue affected, and whether it incline to the congestive or acute inflammatory form. 5thly. Blood-letting may be always had recourse to with more safety and greater advantage at an early than at a late period of the febrile course, and there is more liability to its evil effects in proportion to the advancement of the disease. 6thly. Those auxiliaries should be premised or employed in conjunction which possess depletive action, or are depressants, and do not so reduce the vital powers. Lastly. Its general abstraction should not be employed where local blood-letting would be sufficient. In this fever its *local abstraction* often effectually relieved the urgent symptoms, especially

the head-ache, frontal pain, and sense of uneasiness or heaviness so often complained of at the hypochondria and epigastrium. On referring to the statistics it will be seen that cupping and leeches were employed as follows: In Table No. V., out of 80 cases, 22, or 1 in 3.63, had leeches applied; in Table No. VI., out of 450 patients, 6 were cupped, being 1 in 75; 68, or 1 in 6.62, or 1 in 6 $\frac{1}{2}$, had leeches to the head; 23, or 1 in 19.56, to the chest, and 16, or 1 in 28.12, to the abdomen. In Table No. VIII., out of 80 cases, 28 were treated with local blood-letting; 14, or 1 in 5.71, to the head; 7, or 1 in 11.42, to the chest, and 7, or 1 in 11.42, to the abdomen. Thus, out of 610 patients now instanced, 168 were locally bled, being 1 in 3.76 of the aggregate.

b. Emetics were decidedly of service; and, after their exhibition, certain of the symptoms, especially that of sickness, was not so urgent. Sydenham highly extols emetics, and says they should always be given when nausea and vomiting, in the initiatory stage, are present. There are conditions, however, which contraindicate their employment, viz. when the patient is stout and plethoric, and when there is much pain and tenderness at the epigastrium. When these were given it was at an early part of the disease,—if possible before reaction had set in; or, if that had taken place, blood-letting was first had recourse to; for, in persons of plethoric habit, there is certainly some degree of risk in exhibiting vomits, and thus producing great fulness of the encephaloid vessels. Again, for the same reason, it is not good practice to administer emetics at an advanced stage of fever, when the cerebral vessels are preternaturally loaded; and when further determination of blood, caused by violent straining, might give rise to rupture and sanguineous effusion. They seemed to be beneficial not only in clearing out the primæ viæ, and thus removing irritative matters, but also by detaching the gall-ducts, as the vomiting was always highly bilious, and restoring the cutaneous circulation,—thus relieving the visceral organs from their unwonted supply of blood. A scruple of the powdered ipecacuanha, with a grain of the tartar emetic in a little syrup and

water, or the ordinary wine of these drugs, were given. The solution of the sulphate of zinc also answered very well.

c. Aperients.—Purgative medicines undoubtedly rank amongst the most important remedies in fever, as allowed by most authors who have written on the disease; and when we consider how essentially necessary it is to maintain in proper action the intestinal canal, their virtue may not have been so much overrated. In types of the sthenic kind, where a depletive form of treatment is indicated, the judicious employment of this class of drugs is frequently attended with the most satisfactory results. Dr. Armstrong used to insist upon the desirableness of having two or three evacuations a day; and several authors of eminence recommend the bowels being opened twice during the twenty-four hours, but no writer of modern times has descanted with so much warmth and decision of opinion on their efficacy in fever as the late Dr. Hamilton, whose treatise is too well known to be more than merely mentioned here. Where there is not much reason to apprehend irritation in the mucous membrane of the digestive surface, and where the type is sthenic, the pretty free use of purgatives is often of essential service, and may sometimes avert the necessity of the more potent and immediate depletive, blood-letting. Those of the saline order are most eligible when given with this view, as the various salts copiously remove the aqueous particles from the blood, and thus are retained its more vital properties, so necessary in the great process of assimilation; hence the volume of the vital fluid is reduced, and the oppressed action of the heart relieved, without so much reduction of the vital powers as results from the active use of the lancet. When it is recollected that in the course of fever the secretions and excretions are not as normal,—that it is desirable to carry off the mucous accumulations from the digestive surface, where the effete matters so abundantly produced are liable in an increased degree to collect, and thus be followed by additional irritation on account of their being absorbed into the blood,—and that the peristaltic action of the bowels, from a loss of the organic nervous

energy proper to their muscular coat, becomes impaired,—the use of this description of remedies is at once apparent. Even in the most typhoid cases the gentle action of the bowels should ever be strictly attended to, and kept regular by means of mild stimulative laxatives or enemata. The compound jalap powder,* in doses of a drachm, was very generally given, and with good effect,—it appearing a safe and mild purgative, which cleared out the large bowels of scybala which are there apt to collect; and Dr. Cormack also was of the same opinion, and says that he found this powder very safe where there was abdominal tenderness with strong pulse†. The compound colocynth pill, with blue pill, was frequently given, and answered very well. Where a mere laxative was desired, the compound rhubarb pill, or three or four drachms of castor oil, were administered; as a common saline aperient, the ordinary cathartic infusion,‡ according to the formula of the hospital, was prescribed. In such cases, where the liver was not preternaturally stimulated to a redundant secretion of bile, five or six grains of calomel, or a dose of blue pill at bed-time, and a draught of the cathartic infusion, or a dose of castor oil on the following morning, effectually cleared out the bowels. In some few cases of obstinate constipation, the croton oil, in doses of from one to two drops in a couple of drachms of the castor oil, was employed; but this remedy in fever is better dispensed with where that can be done with convenience, owing to its occasional tendency to produce irritation in the mucous lining of the bowels—a condition ever sedulously, if possible, to be avoided in fever, on account of there being such a predisposition to ulceration along the course of the digestive canal; a lesion to which the French pathologists ascribe all the phenomena of the disease§. The common domestic enema¶ was often ordered, perhaps more commonly than could with convenience in private practice, such expedients being far more easily available in the wards of an hospital. Enemata are highly

valuable on account of the efficient manner in which they clear out the colon, and without being followed by that irritation which medicines at times produce. In order to ascertain when an enema was most indicated I usually had recourse to percussion by means of the pleximeter, as recommended by M. Piorry and my friend Dr. Hughes Bennett. When the sound was dull in the right iliac fossa it shewed that the caput cæcum was distended; hence it was requisite to give medicines by the mouth, but if there was dulness in the left fossa, with resonance in the right, an enema of starch or oatmeal gruel was ordered, which answered in the most satisfactory manner. When the colon is loaded, purgatives by the mouth will not always empty that gut, and indurated fæces and other irritative matters can sometimes alone be removed by this means. Tympanitic distension was generally treated with enemata, composed of half a cupful of starch or common gruel, with six drachms or an ounce of the spirit of turpentine, or, instead of the latter, one to three drachms of the tincture of assafoetida, which were found signally beneficial.

d. *Diaphoretics*.—Considering how important an organ the skin is in carrying off the exhalations from the body, the promotion of its sudatory functions is always to be wished for, because interruption of its natural action necessarily throws a greater stress upon the kidneys, and thus these organs being morbidly stimulated to excess of action, their positive lesion may hence be founded; besides, in health, the cutaneous exhalants expel from the body certain effete matters which cannot be retained without vitiating the blood, and thus disposing to organic disease. In the seven days' fever it seemed desirable to induce sweating, because, as previously related, a copious sweat was one of the most manifest indications of the crisis, such appearing as the manner in which nature effected a resolution; and, as Sydenham has well observed, in the administration of our remedies we should give those which produce like effects to those efforts which are spontaneously produced in the body in the resolution of disease,—or, in other words, we should copy nature. There has been a good deal of contention

* Pharmacopœia Edin.

† Dr. Cormack's Fever of 1843, p. 160.

‡ With Senna, Super-Tart. Potash, &c. Pharm. Noscomii Regii Edinburgiensis.

§ Paper No. IV.

respecting the virtue of diaphoretics, some physicians highly extolling them, whilst others consider them of little more service than as placebos. The acetate liquor of ammonia*, the compound powder of ipecacuanha, and James' powder, in conjunction with hot drinks, were very commonly given and found useful adjuvants; but to say more than this, that they produced any very decided or specific effects, would be affirming beyond what my own experience could substantiate. It is always important that fever patients should not consider themselves neglected, which they would most assuredly do, if without any thing to take: besides a periodical dose not only quiets the mind of the sick, but also ensures the proper attention of the nurse,—a consideration that obtains perhaps more in a public establishment, like an hospital, than with private individuals, with whom there is not that risk of their being neglected.

[To be continued.]

HAS METALLIC MERCURY ANY ACTION ON THE BODY?

In order to ascertain whether mercury, when administered in the metallic state, is without any action upon the system, Mr. Nicol recommends the adoption of the following plan:—wash the precipitate formed by muriate of tin with warm acetic acid, and test the washings for mercury, so as to ensure the residue containing no sub-oxide or protoxide, then make it into pills with very soft conserve of roses, and with as little manipulation as possible. Administer these pills to patients labouring under chronic diseases requiring the use of mercury, but where the loss in a few days in the treatment, supposing the pills to be inert, would be of no material consequence. The patients selected should be such as from previous experience we know can be affected with mercury without much difficulty. Pills made somewhat according to this method have, Mr. N. believes, on one occasion, been tried in England and found effectual; and an ointment, made in a similar manner, has been used and recommended, as answering a better purpose than the common mercurial ointment, by an Italian physician, Orosi. He is not certain, however, that in these cases sufficient care was taken to ensure the perfect freedom of the precipitated mercury from all traces of an oxide or salt of the metal.—*Brit. Amer. Jour.* Aug. 1847.

* For Formula of Diaphor. Mixtures, as used in the Hospitals, see foot-note, Paper No. V.

MEDICAL GAZETTE.

FRIDAY, SEPT. 17, 1847.

A FRENCH contemporary* seriously discusses the question, whether there should not be a limit to the number of individuals annually licensed to practise medicine. In order to arrive at something like a satisfactory conclusion, the writer of the article examines the subject in a statistical point of view. It appears that the numbers constituting the medical profession in Paris for January 1847, were as follows:—

Doctors of Medicine . . .	1,442
Officiers de Santé . . .	175
Pharmaciens (Dispensing	
Druggists)	345
Midwives	480
	2,442

Removing from this respectable list the druggists and midwives, we have a residue of 1,617 practitioners of medicine. The population of Paris at the same period was

Fixed population . . .	945,721
Variable (Colleges, Hos-	
pitals, and Infirmeries)	88,475
Garrison	19,701
	1,053,897

This number divided by 1,617, would assign 650 individuals to each practitioner: but this would give a fallible result, since the inmates of Hospitals, &c., as well as the garrison, must be deducted. In 1845, out of 32,905 births, 5,678 occurred in the hospitals: hence it follows that one-sixth of the labour-cases were taken from medical men and midwives; and of those deliveries which took place out of the hospitals, a large number was withdrawn

* L'Union Médicale, 26 Août, 1847.

from medical practitioners by the licensed midwives. But the extent of practices could never be determined by the relative number of labours: infants and old persons, constituting more than one half of a population, would thus be omitted from the calculation.

The number of deaths will furnish a more precise result; for while individuals die at all ages, a death seldom occurs without some previous illness. Hence, by reference to the number of deaths, it is possible to determine, if not the number of patients, at least the proportion of the population in which the deaths have occurred.

In the year 1845, out of 25,156 deaths, there were in the civil hospitals 9,379, in the military hospitals 492, and in the prisons 129; and it is an obvious inference that the population which furnishes these deaths, cannot be regarded as forming the *paying* portion of the community. For this, we must look almost exclusively to the deaths which take place in private houses. Deducting, therefore, 10,000 from the 25,156 deaths, we have, as a result, that two-fifths of the whole population, *i. e.*, those who become inmates of hospitals and prisons,—belong to the *non-paying*, while *three-fifths* only constitute the *paying* class. It is true that in a mixed population the poor are more subject to disease than the rich; but as a balance to this, it must be remembered that a large number of pauper patients, and, therefore, of deaths, are withdrawn from hospitals by private dispensaries and charities. Hence, as a general summary, it may be stated, that to the 1,617 practitioners, there will be assigned a population of 700,000 souls, giving for the practice of each, 425 individuals, or about 80 families.

There is, however, another method of examining this question:—thus, in-

stead of patients, we may estimate the deaths, and assign his share to each practitioner! Of course, in this case, the deaths in private houses can alone be taken, and they amounted in 1845 to 15,888. In this year, the number of medical practitioners did not exceed 1598: hence there were *ten deaths* to each medical practitioner. In order to work out the calculation, it is necessary to estimate the proportion of deaths to patients. In the hospital-population this is nearly *one-eighth*, and in the town-population it may be taken at *one-fifteenth*. Every practitioner would thus have, on an average of years, a practice including 150 patients annually, or twelve cases per month. It is impossible to enter into the number of visits, and the amount of fees paid for each visit; but at least one-third of such estimated payments must be set down as bad debts: then, again, the distribution of these visits and fees among practitioners is subject to great variation. There are a few, and but very few, men of high reputation, who realize £4000 per annum—another class who receive not more than £2000 per annum—and a still larger section of practitioners, who, by great exertions, are enabled to procure with difficulty only £200 per annum. Still lower in the scale, we descend to the numerous practices, the utmost returns of which do not pass beyond the amount of £60. There are, indeed, many practitioners, who, during their “early struggles” in the first year of practice, have not succeeded in procuring more than the paltry amount of *twenty pounds!*

The evil is unfortunately increasing daily. The number of physicians in Paris progresses yearly in a greater ratio than the population; and it is impossible to define or predict the limit to this system of over-stocking the profession. In the year 1845 there

were 1430 doctors of medicine: 50 died, and 62 left Paris for other places, thus making a deduction of 112; but the number of new and immigrant practitioners during this year amounted to 124. In 1845 there were 168 *Officiers de Santé*; in 1847 there are 175—thus making in two years an increase of 19 medical practitioners.

The *pharmaciens* (dispensing druggists) increase in a still greater ratio. In 1845 there were 326; in 1847, 345,—making an addition of 19, the same increase as for medical practitioners; but, in a quadruple ratio, *i. e.* on a total number, four times less. In 1845 there were 450 midwives; at present there are 480. If the labours which take place in charitable institutions, and in the private practices of medical men, be deducted, there will be left only 50 cases per annum to each licensed midwife. They cannot, therefore live by their occupation; and it is a subject worth considering, how and in what way they derive a living!

This, then, may be regarded as a picture of the decadence of the medical profession in the great city of Paris. Our belief is that it is under, rather than overstated. The writer has omitted from his estimate the important elements, that quackery withdraws annually a very large number of cases from the circle of legal practice, and adds considerably to the number of deaths: hence, whether we take the paying population living or dead, the average number to each practitioner would be much lower than that which he has assigned.

It appears that this subject has received the serious attention of a Medical Commission; and, in answer to the proposition whether there should be a limit to the number of practitioners, the members of this Commission have come to the conclusion that "the principle of limitation to the

practice of a liberal profession would be entirely contrary to the spirit of modern customs and institutions. So far as medicine is concerned, the only reasonable and practicable limit is that of requiring a higher standard of education from those who offer themselves as candidates."

It would seem, however, that, in reference to the *pharmaciens*, or dispensing druggists, a different rule has been adopted. An elaborate report on the subject was made by M. Magonty, of Bordeaux; and, after a long discussion, the principle of limiting the annual number of admissions to practise, was unanimously adopted. To us it appears that the Medical Commission adopted the more correct view. There is no reason why any individual should be prevented from entering a profession because he happens to be among the lowest in a numerical list of candidates; but there is great reason why each candidate should be made to go through such a course of education, preliminary and special, that none but well-informed men shall find admission into it. The mercenary competition which exists among the licensing bodies of Great Britain and Ireland, is the secret cause of the degradation of the profession in this country. Rules are relaxed, and the fees for diplomas are reduced, in order to attract candidates; and, as we have elsewhere remarked, young men may become physicians and surgeons at an age which renders it quite certain that either their preliminary or their medical education must have been shamefully neglected. Until this scandalous competition is suppressed, there can be but little hope that the profession will assume that respectable position in the social scale, to which it is justly entitled. In time of war, when there is a scarcity of troops, men are selected without too close a reference to stature

and other qualities; but in a time of peace such restrictions are enforced as to insure only the admission of a higher class of recruits. A widely different plan is adopted by those who are empowered by law to recruit the ranks of the medical profession. When every street in the metropolis and in great provincial towns is overrun with medical practitioners, and competition is carried to such a pitch that the wages of journeymen-carpenters are eagerly taken as a sufficient remuneration for medical services involving the risk of health or life, the schools and colleges vie with each other in lowering fees, and in reducing the period of study and the amount of qualification to a minimum. Under these circumstances it is not surprising that English medical practitioners should everywhere complain that they are unable to live by the practice of their profession. Although we may not be able to demonstrate the fact so clearly by statistics, our belief is, that in this country they are in as deplorable a position as they are in France.

A CORRESPONDENT has called our attention to the fact, that, in spite of repeated annual announcements, no Statistical Reports of the *Sickness, Mortality, and Invaliding in the Army* have been published since 1840. A Digest of the Annual Reports which were first instituted in 1816, was laid before Parliament in the shape of a Government Report in the year 1838; and in the four following years three other volumes appeared; but since 1842, the parties entrusted with this important branch of military medicine, have contented themselves with a yearly notice that the other volumes were in progress for publication. Five years have, however, been allowed to pass, and the promise has been annually

broken. For the information of those of our readers, who may not be aware of the existence of valuable statistical documents of this description, we may state the following particulars.

"The elementary records, instituted for collecting numerical and other materials for compiling statistical reports of the army, were established by letters from the Medical Board, bearing date December 6th, 1815, and May 8th, 1816. The first call was for half-yearly reports, for which, after a few years, annual reports were substituted. The elementary records may be divided into two leading subjects:—1st. Numerical materials; and, 2dly, Descriptive materials. The first, or numerical portion of the return, contains an account of the number of admissions into hospital, together with the number of deaths, &c. &c. The second portion of the return contains a description of the various matters which materially affect the health of a body of troops. 'Whatever relates to the natural history and medical topography of the station, the variations of temperature, and other meteorological observations, the discipline of the troops, as relating to their health, are all subjects legitimately belonging to science, and military science in particular.'—*Letter of the Board, November 20th, 1846.*

"Military hygiene and the pathology and treatment of disease, comprehend the leading subjects of the second portion of the annual reports,—the first being chiefly confined to facts in a numerical form.

"The annual reports contain the accumulated labours of the medical officers of the army for a period of 30 years. That these reports are '*very valuable*,' is attested by the Director General; and no better authority is required, or can be given. Assuming, therefore, that they are valuable, the whole department has cause to regret, that they have not been converted into a state which would render them creditable to their authors, useful to the army, and beneficial to the medical profession.

"To render the records in question of much use, a summary or digest of them should be compiled and published. Until this measure is adopted

justice will never be done to the labours, science, and talents, of the medical officers who have collected the materials; and, what is perhaps of more importance, the character of the medical administration of the army is not a little involved, in whatever means may be used to render the reports creditable to the army and beneficial to the public.

"It cannot be doubted that there are many officers in the army who, with such materials, possess ample talents for compiling a history of the health-regulations, and a description of the diseases to which troops are liable, in each military command.

"As a nation we have the character of having no military literature. We have, it must be admitted, little or no military *medical* literature; and from the circumstances here stated there is no indication of an improvement in this respect. The facts and observations collected, with praiseworthy labour, by the medical officers, for a long series of years, are allowed to be added to the gross heap of materials already accumulated, without any prospect of their being rendered practically useful."

France and Prussia have recently shown their anxiety for the hygienic condition of their armies by the publication of elaborate statistical reports. We are always destined to be behind continental nations, in looking after the welfare of great sections of the community.

DECOMPOSITION OF DISTILLED WATERS.

MR. BASTICK has described in the last number of the *Pharmaceutical Journal*, a singular decomposition, to which distilled waters, when prepared with essential oil and spring water, are liable. Spring water contains sulphate of lime, and by a slow deoxidizing power, the carbon of the oil takes the oxygen from the sulphuric acid,—the liberated sulphur combining at the same time with a portion of the hydrogen of the oil. In this way the whole of the oil may disappear, and the water will acquire the offensive odour of sulphuretted hydrogen gas. For the preparation of these waters pure rain or distilled water only should be used, and no more of the essential oil than the water will dissolve. No rectified spirit is required.

Reviews.

Transactions of the Provincial Medical and Surgical Association, instituted 1832. New Series, Vol. iii. 8vo. pp. 372. London: J. Churchill; and Sherwood and Co. Worcester: Deighton. 1847.

THE value of the papers which have from time to time appeared in the *Provincial Medical and Surgical Transactions*, renders that publication one of the most important works of reference to be found in our medical libraries; but the interesting character of the contents of the new series, and the great beauty of the engravings with which the three volumes now published are illustrated, are most highly calculated to give extended fame and importance to the labours of the society. The present volume contains many excellent memoirs, which we shall proceed to notice in their proper order.

An Experimental Inquiry into the Effects of Hydrocyanic Acid produced upon Animal Life. By THOS. NUNNELEY, Esq. F.R.C.S.E. &c.

A very few years since, the subject of poisoning by prussic acid was, perhaps, the most imperfectly understood of all the topics discussed in lectures and treatises on toxicology. Now, however, that the almost simultaneous occurrence of several extraordinary instances of murder and suicide by this drug has placed the matter very prominently before the notice of the public and of the profession, the entire subject has been most carefully investigated by a number of able investigators, who have succeeded, not only in establishing a considerable mass of important physiological and therapeutical data with reference to this deadly agent, but have also done much to render the detection of the cause of death in recent cases of poisoning by this acid a matter of almost absolute certainty.

In the paper before us, Mr. Nunneley has furnished us with the results of 141 experiments, instituted by himself, upon dogs, cats, rabbits, mice, snakes, lizards, toads, frogs, fish, snails, earth-worms, as well as upon caterpillars, spiders, flies, and other

kinds of insects, for the purpose of determining the precise effects of hydrocyanic acid upon animal life;—whether these are always uniform or not; what dose may destroy life; if the same dose always produces the same effects; if the effects vary according to the quantity taken, or to the manner in which it is exhibited; if the degree of concentration or dilution alters the effects, and if there be any means of counteracting its action; if so, if we are to look for an antidote for the poison, or only to a remedy for the effects of it;—if to an antidote, what is the most potential;—if to a remedy only, which should be selected.

We regret that our space will not admit of the quotation of more than a small proportion of the highly interesting deductions which the author has drawn from these experiments. The following extracts will, however, convince our readers of the value of the facts adduced:—

Volition and power of voluntary motion may be retained after a fatal dose.—"Upon one most important practical question these experiments are quite decisive, and fully confirm the reports which have been made of the length of time during which not only consciousness, but perfect volition and entire control over voluntary motion, may be retained after a dose of hydrocyanic acid, sufficiently large to prove fatal within a few minutes, has been taken. In some few instances, the action of the poison was so expeditious as to prevent almost the slightest exhibition of voluntary motion; but in the majority of dogs, and other warm-blooded animals, about twenty seconds elapsed before any symptoms were manifested: and this space of time, in a man, would allow of several actions being done, as the corking of a bottle, and placing it in the pocket or upon a shelf—the possibility of which has been much doubted. In several of the dogs, a much longer interval intervened, during which they gave no indication of having had hydrocyanic acid: thus the time which elapsed before any decided symptoms of poisoning were shown in five examples, was fully sufficient to have permitted a man to have performed many voluntary actions, and to have not only put away any thing which could have revealed the nature of what he had taken, or how he had taken it, but also to have passed a considerable distance from the place where he had swallowed the poison;—while a still more remarkable retention of consciousness and power was seen in one dog, which went down three or four steps of some stairs, saw the door at the

bottom was closed, and came back again; in another, which went down, came up, and then went down again, the whole flight, a steep winding staircase; and in a third, which retained sufficient vigour to jump over one of the dogs, and then actually leaped completely across the open top of the staircase. In another dog, to which the acid was given by the rectum, fully two minutes elapsed before symptoms set in, and it was not until a further period that voluntary motion was lost, yet the animal died in thirty-seven minutes; while in a few, but only a few instances, as No. 60, where the effect was almost immediate, yet the dose was not sufficient to destroy life" (pp. 74-5).

Local effects of hydrocyanic acid.—"The acid acts locally as well as generally. This is seen not merely by its producing vascular congestion, but also by the decided effects upon the nerves of the part. Thus, when it is dropped into one eye of an animal, the pupil of the eye is sooner, and to a greater extent, dilated than that of the other; and when the acid is administered by the rectum or the vagina, both hind legs are sooner affected than the anterior portion of the body. But that the acid does not directly paralyse muscular fibres, when locally applied, is shown in the experiment upon the frog, No. 108, where a drop of acid applied upon the heart itself acted as a stimulant, inducing a quickened action—possibly any other fluid would have done the same. Had, however, the acid been a direct sedative, such an effect would not have continued for so long a time; and, perhaps more decidedly still, in the cat, No. 96, where three drops were put upon the heart, without arresting its motion" (p. 76).

Quantity of acid required to destroy life.—"There is no fixed quantity of acid which will invariably destroy life. The boundary between the dose which is hazardous, or even will destroy life, and that which may be taken with impunity, is very slight and indefinite—dependent upon individual and probably varying circumstances. The same creature is, I apprehend, liable to be seriously affected by a dose which, at another time, would produce but little effect. This, indeed, appears to be fully proved by the varying effects produced upon the cat, No. 141 *bis*, by exactly the same doses of acid. The more vigorous the animal, *ceteris paribus*, the larger is the quantity which may be taken. The stomach being full of food lessens the effect of the acid, probably by its mixing with the acid, and thus preventing the poison coming into such ready contact with the mucous membrane. At this period there is also more vigour in the system, whereas an empty stomach allows the immediate contact of all the acid at once, and a hungry animal possesses less power of re-

sistance. It was owing to the stomach being nearly filled with food recently taken at breakfast, that I think may fairly, at least in part, be attributed the long continuance of life after the swallowing of so large a quantity of hydrocyanic acid as there is every reason to suppose was taken by the person whose case is reported in the Provincial Medical and Surgical Journal for July 23, 1845. The age of the animal, I am quite satisfied, makes a material difference. The foregoing experiments, I think, fully prove that a much smaller dose of the acid is fatal in young animals than in old, and that almost in direct proportion to the youth of the creature is it speedily and fatally brought under the influence of a smaller dose of the acid. Several of the experiments would, however, shew that this must be taken with some limitation, for it would appear that the very young animal is actually less susceptible—requires a larger dose of the acid to destroy it—than does one of the same species a little older. This is so curious a fact, that, were there not sufficient evidence to support it, we should feel much inclined to doubt it. Is it to be regarded as another proof of the approximation of the young of the higher species to the adult of the lower?" (p. 82.)

Influence of the degree of concentration of the acid.—"The degree of concentration of the acid has no very material influence over its action. The dogs to whom a diluted acid was given were quite as speedily and violently affected as those to whom acid of Scheele's strength was administered. Indeed, I am inclined to think, from observing the action of the concentrated acid, containing twenty-five per cent. of real acid, that a moderate degree of dilution renders the action of the acid more speedy, probably from bringing it at the same instant into contact with a larger surface. Certainly the foregoing experiments show, that dilution, to a considerable extent, does not weaken the action, if it does not rather accelerate it" (p. 82).

Relation between the rapidity of the effects of the poison and the quantity taken.—"The action of the acid is not proportionably speedy to the quantity taken. The difference between the rapidity in the effects of a large dose of the acid and one which is so small as to be barely sufficient to destroy life, is certainly well marked, but this is not the case between two doses each of which is capable of destroying life with moderate rapidity: as, for instance, suppose forty minims of Scheele's acid will kill a dog within four minutes, it does not follow that eighty minims or two drachms would do so in two minutes or in one. Hence, when called to a person poisoned by hydrocyanic acid, we cannot, merely from the length of time he has survived, or the evidence of the

symptoms, determine any thing with certainty as to the degree of concentration or dilution of the acid, nor, except within wide limits, much as to the absolute quantity taken" (pp. 82-3).

Effects of the acid when applied to mucous membranes.—"The poison acts with almost, if not absolutely, equal rapidity and certainty, when applied upon a mucous membrane, as the conjunctiva, the rectum, or the vagina, as when swallowed. A knowledge of this fact may be of the utmost importance in a medico-legal examination, as it would not be difficult, either by force or cunning, to introduce into the vagina or rectum, or put upon the eye, a sufficient quantity of the acid to quickly destroy life—a mode of administering the poison which a murderer who had sufficient acquaintance with its properties is not unlikely hereafter to adopt. Many experiments prove that the action of the acid upon the lungs, when air impregnated with it is breathed, is not only rapid but certain in its effects, and forms one of the easiest modes of exhibiting it—one which it would be very easy to employ, but most difficult after a few hours to detect, as the odour being so diffusible, is very soon dissipated" (p. 84).

Occurrence of the "death-shriek."—"Much has been said in some recent trials as to the death-shriek, as it was then termed, in persons who are suffering under a poisonous dose of hydrocyanic acid. Though it is now generally admitted that the shriek does not uniformly occur in man, it does not appear to be so generally known that this is also the case with animals. The foregoing experiments will, however, show that, so far from the shrieking being characteristic of death by hydrocyanic acid in dogs (and I may also add in other animals, as rabbits, mice, cats), it occurs in only half the number of cases, and in not more than one-third, if quite so many, very loudly; but when it does occur, the cry is of so peculiar a kind, and so indicative of severe distress, as to give an idea of consciousness on the part of the animal of impending death—as though it felt that its condition was such as to render all assistance unavailing: it is different from anything I have heard in any other condition of dogs or other creatures, and is, I think, when present, characteristic of the poison" (p. 85).

In entering upon a discussion of the most proper means of treating cases of poisoning by hydrocyanic acid, the author declares that he knows of no antidote to that acid. Chlorine, solution of the nitrate of silver, alkalies, and the preparations of iron, have all been tried by Mr. Nunneley, but with scarcely any advantage. He believes

too, that, if the class of antidotes give us little hope of counteracting the poison by changing its composition, the expectation of relief from remedies against its effects is not much more cheering. His experiments have led him to abandon every expectation of benefit from the employment of electricity and galvanism. Mr. Nunneley considers that, although in his experiments the effects of cold water were not such as to confirm the very high expectation which some practitioners have held out of its value, nor to lead to the conclusion that, where a large dose of the acid has been taken, much good will be effected by the use of it, yet he thinks we may fairly consider that, when the dose has been barely sufficient to destroy life, cold affusion possesses some power for good; and hence it is one of the means to which we should, without any loss of time, have recourse. The author warns practitioners against the supposition that if the moderate dashing of water is useful, a more continued and general application of it would be still more beneficial. This is most decidedly not so. A moderate quantity of water, suddenly dashed a few times upon the face, or the head just plunged in water, produced better effects than placing the whole body in it. In some of the animals, the effects of the poison appeared to be delayed by a good shaking; and in several of those which recovered, the return of sensibility and motion was, Mr. Nunneley thought, decidedly accelerated by it; indeed, from its effects upon animals, he is inclined to estimate its value as highly as that of any thing he has tried. The author has clearly shewn the inutility of attempting to bleed in cases of this description. Observing that, in most of the dogs which recovered, vomiting took place, Mr. Nunneley tried the effect of sulphate of copper, sulphate of zinc, and tartarized antimony; and found that when the dose of the acid was small, and vomiting was induced, the creature recovered; but, on the contrary, if large, the stomach became insensible to the action of the emetic, even though the dose of this were considerable, and administered immediately after the poison. Whatever may be the value of stimulants, the author considers that his experiments will show that little advantage is likely to result

from sulphuric ether; in fact, if any effects were produced by it, the action of the acid was increased in power and rapidity.

It is, however, upon diffusible stimulants that great reliance has been placed. The author has very carefully tested the efficacy of ammonia, applied in a great variety of ways, in many of the lower animals, and has decided that, although upon the whole, under some circumstances, ammonia may possibly possess some virtue as a remedy, it by no means merits the praise which has been bestowed upon it, nor are we justified in placing much dependence upon it when the dose of acid has been at all considerable. The author concludes his valuable report with the disheartening, but not unexpected, conclusion that, "when the dose of the acid has been large, its effects are such as to completely set at defiance all our means of preserving life, even though we were provided with them for immediate application; and that even where the dose has been much smaller, we have no antidotes, while our remedies are of little efficacy, as compared with those which we can avail ourselves of when other agents destructive to life have been used."

Observations on the Operation of Ovariectomy. By GEORGE SOUTHAM, Esq., Surgeon to the Salford Royal Hospital and Dispensary, Manchester.

IN introducing an unsuccessful case of ovariectomy, which has recently occurred in his own practice, Mr. Southam observes that,—

"By a majority of those who have made the diseases of females their more especial study, ovariectomy is now considered perfectly justifiable; but there still remain some who refuse to sanction it, principally from the apparent high rate of mortality with which it has been hitherto attended. Though we possess a tolerably correct statement of the number of fatal cases, several have either not been published, or so vaguely described, that no reasoning can be founded on them; and as a considerable period has elapsed since their occurrence, the suppression of the particulars can only be regarded as a proof that the operators have thought that they would reflect no credit on their judgment either in a medical or surgical point of view."

We fully accord with the justice of

Mr. Southam's delicately expressed hint with regard to the fatal cases of ovariectomy which still remain unpublished. The surgeon under whose hands an operation which is still *sub judice* absolutely fails, and who determines to conceal, as far as possible, such ill success from the profession, at a period too when he is fully aware that every successful instance of the kind is put forth as an encouragement to future operators, is assuredly guilty of a great offence against humanity. We are also willing to admit that the operation of ovariectomy is perfectly justifiable in certain cases, but we are not disposed to join the author in his assertion that, "by a majority of those who have made the diseases of females their more especial study, ovariectomy is now considered perfectly justifiable." We cannot perceive upon what certain data the author can have arrived at so positive a conclusion, and we think that he is scarcely justified in venturing such an assertion. The subject of the case narrated in this paper was a married woman, twenty-six years of age, the mother of five children, the last of which she gave birth to thirteen months previously. She had only been aware of the existence of the tumor ten months. The first incision was three inches in extent, but this was afterwards enlarged both upwards and downwards. The tumor when removed weighed upwards of nine pounds, and was composed of fibrous structure and cerebri-form matter, enclosing many cells filled with a white gelatinous fluid. The patient survived the operation seven days. Her death is ascribed by the author to "deficiency of the constitutional powers,"—a cause to which we apprehend every death that has occurred since the creation, may be very safely attributed. There were discovered after death partial traces of peritoneal inflammation, chiefly involving the pelvic cavity. "The left uterine appendages" (remains of the attachment of the tumor), "were encircled by the ligature, the strangulated portion of which" (of the appendages, not of the ligature), "was very much swollen, and in a complete state of sphacelus." The inferior lobes of each lung were highly congested, and in some places exhibited marks of recent inflammatory action. There

certainly appears to be a great tendency to inflammation of the lower portions of the lungs in some cases, both after paracentesis of ovarian tumors, and subsequently to the operation of ovariectomy. The lungs may escape in a large proportion of these cases, but the accident is always one for which the practitioner will do well to be prepared.

Observations on the Pathology of Abscess of the Heart, with a Case. By J. H. STALLARD, Esq., Surgeon to the Leicester General Dispensary.

THE subject of this case was a shoemaker, æt. 60, who was seized, whilst at work, with coma, cyanosis, and great prostration. The author was immediately summoned, and found him with a cold clammy skin, the whole surface of a blue colour, and the face suffused with perspiration. He lay in a semi-comatose condition, but was sensible when aroused; the pupils acted naturally; the pulse full, soft, and feeble, beating 60 in the minute; the respiration slow and gentle. On the following day he reported himself better, and stated that he had never been subject to similar attacks. The pulse was stronger and more frequent, but the respiration was still slow, though less so than yesterday; the skin was warmer, and had lost much of its blueness; the sounds of the heart were feeble, but not abnormal in any other way. He had frequent threatenings of weakness, which were relieved by brandy and water. He remained in this state two days, gradually becoming more feeble, and he died when supposed to be asleep. On examination, an abscess was observed, situated at the apex of the left ventricle, and of a very irregular shape, being most pointed towards the apex of the heart, from the surface of which it was separated by two or three lines of healthy structure; above, it projected considerably into the cavity of the ventricle, with which it communicated by a small fissure; the interposed septum was about one line thick, and appeared to consist of thickened endocardium. The cavity of the abscess contained a bloody purulent-looking fluid; its lining membrane was of a light red tint, and presented a granular appearance. Around the abscess the muscular tissue was darker than natural, and in the outer wall of

the same ventricle were observed several fissures, containing a dark-coloured fibrinous material, and some of these, though not all, communicated with the cavity of the ventricle; the coronary arteries were much ossified.

It is of course impossible to give a decided opinion, after having merely read the particulars of this case, but we cannot help feeling strongly impressed with the idea that this was not, in reality, an example of abscess of the heart, but merely an instance of aneurismal yielding of the apex of the left ventricle (a morbid condition which is very liable to result from obstruction of the coronary arteries), in which the hollow had become filled with one of those centrally softened fibrinous concretions which are frequently deposited upon the yielding surface in such cases.

The Retrospective Address. By W. H. RANKIN, M.D. Cantab., Physician to the Suffolk General Hospital. Delivered at the Fourteenth Anniversary Meeting of the Provincial Medical and Surgical Association, held at Norwich, on Wednesday and Thursday, August 19th and 20th, 1846.

Dr. Rankin's retrospect of the novel facts which have been contributed to the science of medicine during the preceding year is one of the most complete and judiciously compiled abstracts that has ever been submitted to the profession: it is indicative of great judgment and extensive reading on the part of Dr. Rankin, and may be perused throughout with great advantage.

A Case of Large Secondary Prostatic Calculus removed by perineal incision. By T. HERBERT BARKER, M.B. Lond. &c. &c.

The subject of this case was a farmer's labourer, 26 years old, who had suffered under incontinence of urine since he had been four years of age. When he consulted Dr. Barker, he was labouring under complete retention of urine. Examination of the perinæum and per rectum showed the presence in the posterior part of the urethra of several calculi of large size. On the following day this calculous deposit was removed by an incision made through the structures of the perinæum, two or three lines to the left of the raphe, commencing about

two inches and a half from the anterior margin of the anus, and terminating within half an inch of this margin. The calculi were twenty-nine in number, and weighed three ounces, four drachms, and one grain. They were found by Dr. G. Bird to be identical in composition with the concretions occasionally found in glandular structures (as salivary, bronchial calculi, &c.), consisting of phosphate of lime, with a rather larger proportion than usual of the ammoniaco-magnesian phosphates. These calculi closely cohered by curved faces, forming altogether a mass four inches and seven-eighths in length, and considerably larger at one end than at the other. The larger extremity had been situated posteriorly in the prostatic part of the urethra. Around the broadest part it measures four inches and five eighths, from which it tapers to the other extremity, where it measures one inch and five-eighths in circumference. Midway between the two ends it measures two inches and a half. It is rounded and convex on the surface which was nearest to the perinæum, and the opposite surface is somewhat flattened and concave. In observing upon this case, Mr. Crosse observes, that "a relapse is almost sure to happen in all cases of a large calculus removed from the prostatic urethra, because the urethra remains large and out of shape, leading to deposit from the urine lodging there, and also because the lining membrane of such cavity furnishes a mucous secretion which much disposes to deposit of fusible calculus." Dr. Barker adds, that the man apparently continues free from further calculous deposit (the operation was performed in October, 1843), although he is unable to retain a larger quantity of urine than about an ounce at a time.

We shall reserve our notice of the valuable essay by Mr. Crosse on *Inversio Uteri* until the appearance of the third and concluding part.

Dr. James Paxton's lecture on "*Pathological Memorials*" contains some judicious remarks on the great value of a knowledge of the arts of drawing and painting to members of the medical profession, in representing and preserving the appearances of morbid structures.

Correspondence.

CASE OF POISONING BY GODFREY'S CORDIAL. FAILURE OF THE USUAL REMEDIES. RECOVERY UNDER THE USE OF THE ELECTRO-MAGNETIC BATTERY.

SIR,—I was called to an infant, only three weeks old, which had had given to it half a teaspoonful of Godfrey's Cordial, at 6 o'clock in the evening of the 25th December, 1846. A neighbour, who went into the house at 9 o'clock, observed that the countenance of the child was ghastly, and being unable to awake it, alarmed the mother, and I was sent for between 10 and 11 o'clock. I found the child on the nurse's lap: the pupils were contracted to a point, and there was a total loss of muscular power. The usual treatment, (dashing cold water from a great height on the face, flagellation, ammonia to the nostrils, injecting cold water into the ears, with the occasional application of mustard poultices) was adopted with the effect of only temporarily arousing it from its lethargic state, and it soon relapsed into a state of stupor. I remained with it three-hours; and when I returned at five in the morning, there was no improvement. Cold affusion was again resorted to: this so far aroused the system as to allow me to introduce five grains of the sulphate of zinc: I waited an hour, and left strict injunctions with the attendants how to proceed until I saw it again. At 7 o'clock I was called up, when I found, by a stethoscopic examination, the heart's action lessened, the temperature of the body sinking, the pupils still contracted and immovable, and the usual means which had before aroused the system now had no effect. I sent home for an electro-magnetic battery. Removing the coil, I passed several gentle shocks along the spine and through the cardiac region. These brought on muscular contraction, which was evinced by the child throwing out its legs and hands; by the countenance becoming distorted, and by its uttering a cry. I continued the shocks for about ten minutes. The heart's action was accelerated, and the eyes were kept opened. I administered beef-tea with ammonia, and then enveloped the whole body up to the chin in heated flannels, covered closely with an oil-silk to retain the heat, in which state it remained for many hours. On my next visit, I had the gratification of finding the little patient sucking the breast. It had recovered completely from the effects of the poison.—I am, sir,

Yours very respectfully,

W. J. TUBBS.

Upwell Isle, 1847.

MEDICAL ATTENDANCE ON THE SICK POOR IN IRELAND.

SIR,—In your valuable journal for July 16th, page 111, under the title "Medical Attendance on the Poor," I find the following statement. "In a discussion which took place in the House of Lords on the Irish Poor Law Bill, a noble Lord moved the omission of the clause which allowed the appointment of medical officers." You report the noble Lord to have said, "Though he did not wish to deprive the parties of aid, he thought that injury would be done to the industrious poor who now derived assistance from medical charities:—if those charities were properly and efficiently managed, they would afford sufficient aid to all the poor, without medical relief out of the poor-rate. In moving the amendment he was testing the sincerity of the Government as to carrying through an unfinished medical relief bill." On this you remark, "It will be seen from this 'humane' suggestion that certain parties are ready to withdraw the pittance now allowed to the medical officers or districts, and are quite ready to make use of the charitable institutions of the country in order to avoid the payment out of the poor-rate of a comparatively small sum for medical attendance."

I assure you, sir, I read this remark of yours with surprise, and I am quite sure you cannot be in the least aware how medical relief has been administered to the sick poor in Ireland, or of the nature and constitution of the several institutions for the purpose. If you spare me a small space I will inform your English readers on the subject, and shew to you that the noble Lord's motion had a different tendency to what you represent, and that this Nobleman, who is known and esteemed for his liberality, benevolence, and unostentatious charity, had no idea of diverting charitable institutions from their purposes, or of in any way injuring the medical officers of these institutions.

Medical relief in Ireland is administered to the sick poor through the following machinery, supported as I shall describe.

1st. County infirmaries—supported by subscriptions of life and annual governors, and by presentments from the grand juries, not to exceed £1400 a year.

2d. County fever hospitals—supported by grand jury presentment.

3d. District fever hospitals—established and supported by private subscription, and by grand jury presentments of an annual sum double the amount of subscriptions.

4th.—Dispensaries—established by private subscription and supported by subscriptions and grand jury presentments, equal in amount to the sum subscribed.

These institutions are in no way connected

with the poor law, they have a separate existence, and owe their support and maintenance to private benevolence and grand jury assessment dependent thereon.

In addition to these institutions sick poor are relieved in the Union workhouses, and, under a special provision, fever wards have been erected in connection with many workhouses in Ireland.

Now, sir, in the four cases of medical charitable institutions above named, many defects have been found to exist, as follows: there being too few county infirmaries (only one for each county), hence too little hospital aid for sick poor and accidents; there being very scanty accommodation for fever patients; dispensaries being unequally distributed over the country, and dependent alone on private subscription for their origin and support, as without subscription there can be no presentment; and there being no general system of inspection, supervision, and control.

All these matters have been inquired into and investigated; first, by the Poor Law Commissioners; next, before a committee of the House of Commons in 1843; and, lastly, before a committee of the House of Lords in 1845; and the reports and recommendations of these several bodies are before the public, but still not acted on.

The smallest reflection will shew that, although these institutions are numerous, still they do not afford the quantity of medical aid to the sick poor which is required; they are often badly supported, sometimes inconveniently situated, and, in many instances, inefficiently conducted; and all parties agree that some change in their distribution, constitution, government, and support, is much required.

The clause the omission of which was moved by the noble Lord is as follows:—

5 Sect. 10 Vic. cap. 31. "And be it enacted that in any case in which it shall appear to the Poor Law Commissioners that the appointment of a medical officer or medical officers, for affording medical relief out of the workhouse in any union, is necessary and expedient, it shall be lawful for the Commissioners to direct the guardians of the union to appoint a medical officer or medical officers; and the guardians, on the receipt of such authority and direction, shall appoint a medical officer or medical officers accordingly, subject to the approval of the said Commissioners."

Now this clause adds as it were another wheel to our machine for administering relief to the sick poor. I am not going to deny that it will not be useful, for I am convinced that its operation will be advantageous and beneficial, and that it is required in districts where, either from

parsimony, apathy, or unwillingness to raise funds, there are as yet no dispensaries for affording medicine and domiciliary attendance to the sick poor, but I am equally convinced that had the reports of the Poor Law Commissioners and their suggestions been carried into effect on the subject of medical relief in Ireland, or had the recommendations of either the House of Commons' committee, or the more recent recommendation of the committee of the House of Lords, been carried out, we would long since have had efficient legislation on medical relief in Ireland, and our medical charities placed on a firm basis independent of private subscription, and would thereby have been enabled to afford more extended relief to the sick poor, and the medical attendants attached thereto would be in a more comfortable and more respectable condition, and be rendered independent of both the smiles and frowns of the present governors, who purchased their influence through their subscriptions.

You will see now that the noble Lord, (I believe Lord Clancarty, who is well acquainted with the subject), object was not to withdraw the pittance of the medical officers, but to ascertain if there was even a remote chance of their condition being bettered, and of medical relief being more efficiently administered separate from the poor law. I regret the length to which this letter has run, but I could not curtail it.

Your obedient servant,

T. H. BABINGTON, M. B.

Medical Officer,
Coleraine Union Workhouse.

Coleraine, Ireland, Sept. 9th, 1847.

ON REMOVING FROM LINEN, STAINS PRODUCED BY THE SALTS OF SILVER.

Messrs. SMITH have advised a process, already suggested by others, which is remarkable for its simplicity. The stained portion of linen is well saturated with a strong solution of chloride of lime. This converts the silver to a white chloride, which is then removed by ammonia, or by a solution of hyposulphite of soda. If the stain be deep in the fibre and of old standing, this process must be repeated several times before it is effectually removed.—*Pharmaceutical Journal*.

A solution of the cyanide of potassium is also useful in the removal of these stains. The plan of converting them to iodide of silver by tincture of iodine, and washing out the iodide by hyposulphite of soda, is not always successful.

Medical Intelligence.**CASES OF POISONING WITH ARSENIC.**

THE *Gazette Médicale* gives a brief account of an attempt to administer arsenic to two persons; but the poisoned food was given to two animals, which died from the effects. On inspecting the bodies, complete evidence of the attempted crime was obtained. The inquiry led to the exhumation of the body of a man aged 80, who had died suddenly eighteen months before. Although it was in an advanced state of decomposition, yet the presence of arsenic was clearly demonstrated in it, by an analysis of the viscera.

RESTRICTION ON THE SALE OF POISONS IN FRANCE.

SEVERAL druggists have been recently fined and condemned in the payment of costs of prosecution, in France, on account of their having sold poisons to the public without a register, and of their not having kept the poisonous substances under lock and key.

POISONED BREAD.

ON the 19th of August, a baker of Bordeaux made a large quantity of bread; and on the second day it was observed that this bread had undergone a remarkable change. When it was examined by Dr. Laubarède, he detected in it the poisonous fungus known under the name of *Oidium aurantiacum*. On the interior, it was remarked that the poisonous portion of the bread was in white patches, which became of an orange-yellow colour at a heat below 100°, and acquired the nauseous and peculiar odour of the cryptogamic plants. Fortunately the bread had not been eaten. The cause of the change was unknown, but the flour was probably impure.

THE EMIGRANT FEVER.

OUT of 476 passengers who left Liverpool in the ship *Virginus*, for Grosse Isle, the extraordinary number of 158 died on the passage of fever, and no fewer than 186 were ill on landing.

The latest intelligence from Grosse Isle is to the afternoon of the 10th of August, at which time the hospital state was as follows:—

Men	856
Women	726
Children	518

2,100

The following is the return for the week ending 7th inst.:—

In hospital, as previously reported	1,704
Admitted since	778

2,482

Discharged	170
Died	196
Remaining	2,116

Total 2,482

During the same interval there were 24 deaths among the healthy (!) passengers in the tents; and the bodies of 40 adults and 47 children were landed from ships and buried on the island. The number of persons buried that week, thus amounted to 307.

Emigrants are not the only victims to this fever, as the following quotations from the *British American Journal* will show:—

Died, at Montreal, on the 15th ult., Dr. Bernard M'Gale, ætæ 45, from typhus, contracted in the performance of his duties as one of the medical attendants at the Emigrant Sheds, Griffintown.

Died, on the 16th ult., of typhus fever, at the residence of his brother, the Rev. H. Grasett, A.M., Rector of Toronto, George Robert Grasett, Esq., Principal Physician of the Emigrant Hospital of Toronto, and one of the Physicians of the General Dispensary. Dr. Grasett was the son of the late Dr. Grasett, a military medical officer, some years since on service in this colony. The subject of this brief memorial was a young man of great promise, and in the enjoyment of an extensive and rapidly increasing private practice.

SANITARY LEGISLATION FOR THE METROPOLIS.

A COMMISSION to inquire into the special means requisite for the sanitary improvements of the metropolis, has just been issued. The members already named are—Lord Robert Grosvenor, Mr. Chadwick, Dr. Southwood Smith, Professor Owen, and Mr. L. Jones.

DEATH OF MEDICAL OFFICERS FROM FEVER.

THE death of Mr. Richard Robinson, who has left a widow and large family unprovided for, has, we lament to say, been followed by that of Mr. Henry Hatton, a gentleman only 28 years of age, the medical officer of the western district of Great Bolton, who caught the fever in the discharge of his duty, and sank under the malady on Tuesday last. Memorials have already been forwarded to the Poor Law Commissioners from various unions, praying that provision may be made for the wives and families of those officers who have, or may hereafter become victims of malignant fever caught in the discharge of their duty to the public; and we feel no little surprise that the Government have so long delayed their decision on the matter.—*Bolton Free Press*.

ALLEGED MURDER BY BURNING.—ACQUIT-
TAL ON THE ALLEGATION OF SPON-
TANEOUS COMBUSTION.

ON the 6th of January last, the body of a man was found lying in bed and in a state of combustion, by some persons who entered his bed-room in the morning. The chamber was filled with a dense smoke, and one of the witnesses asserted that he saw playing around the body of the deceased, a small whitish flame which receded from him as he approached. The clothes of the deceased and the coverings of the bed were almost entirely consumed; but the wood was only partially burnt. There were no ashes, and but a small quantity of vegetable charcoal; there was, however, a kind of mixed residue, altered by fire, and some pieces of animal charcoal which had evidently been derived from the articulations. The deceased was in the habit of carrying lucifer matches in his waistcoat pocket, and, according to his usual practice, he had had a hot brick placed at his feet when he went to bed the preceding evening. Two hours afterwards his son and daughter-in-law passed by the door of his room, but there was nothing which attracted their attention. It was only the following morning early, that his grandson found his body in the state described. The deceased was 71 years of age. He was not fat, nor was he addicted to drunkenness. The temperature of the air was low: there were no indications of electricity.

The son and his wife were suspected of having murdered the deceased and burnt the body in order to conceal the traces of the crime; and a Doctor Masson was commissioned to investigate the case. The body, which had been buried, was exhumed and examined. The cravat, partially burnt, was still around the neck, and part of a sleeve of the night-shirt was found. The hands, completely burnt, were only attached to the fore-arms by some carbonized tendons which gave way on the slightest touch. The thighs were completely detached so as to resemble a wilful mutilation but for the discovery of animal charcoal about them. From these facts, Dr. Masson, considering it impossible to ascribe these changes to the effect of accidental burning—and that under common circumstances they could only be produced as a result of violent combustion continuing for some time—drew the inference that the burning must have resulted from some inherent cause in the individual, probably roused into activity by the hot brick placed at the feet of the deceased. The burning once commenced, would be easily supported by the state of the tissues. Hence the case was in his opinion to be referred to the class of spontaneous combustions. It is said that Orfila coincided with M. Masson in this extraordinary opinion, and the accused were acquitted.—*Gazette Médicale*, Sept. 4.

. We must totally dissent from the opinion expressed by M. Masson, the tendency of which is only to render an obscure case still more obscure. It is quite possible that the accused had not caused the death of the deceased: for so far as the description goes, the man might have been accidentally burnt after he had retired to rest. M. Masson's difficulty appears to have been, that a long-continued action of a strong heat was necessary in order to produce the effects which he saw; but in this supposition he may have been mistaken. It is not always easy to assign the degree or the duration of the heat which is required to produce particular effects on the body: and flame is heat at its maximum degree. It appears to us far more probable that he had underrated the effects which are liable to follow from an accidental ignition of the clothes, than that a warm brick placed at the feet should excite spontaneous combustion in the body, and convert the joints to animal charcoal! Orfila's opinion was probably a mere *obiter dictum*.

PROGRESS OF THE ASIATIC CHOLERA.

THE St. Petersburg Gazette publishes the following details of the course of the cholera into the Transcaucasian Provinces, where it still prevails, but not with any great intensity. The disease was brought by the pilgrims of Trebisonde from Herat to Samarcand, in September, 1845, and into Bulgaria in the November following. Thence it advanced as far as Teheran, there it raged with great violence, and after the 12th of June, 1846, carried off as many as 300 people a day. Those who were attacked dropped suddenly down in a state of lethargy, and at the end of two or three hours expired without any convulsions or vomitings, but from a complete stagnation of the blood, to which no remedies could restore its circulation. From Teheran, the cholera visited successively Ispahan, Shiraz, and Bagdad, where it made still greater ravages. From Bagdad it was carried on in December by the Pilgrims to Mecca. It was on the 29th of September, 1846, that it made its first appearance at Tauris, and on October 29th attained its height, carrying off in this short interval no fewer than 6,000 victims. In Persia it was observed that the direction of the wind had no influence on the progress of the scourge, which was extremely capricious and irregular, sometimes passing over large and wide districts without leaving any trace of its passage. On the 16th of October the first symptoms of the disease were perceived at Salyan in Transcaucasus, but it was less virulent than in other countries. During the summer of 1846 it appeared also at Tiflis, but the attacks there were fewer than elsewhere; for, notwith-

standing the great heat, the number of persons attacked did not exceed six, and the deaths only one a day, out of a population of 60,000 souls. In all, between May 30 and June 12, there were 164 cases and 67 deaths; that is, a little more than one death for every 1,000 inhabitants. In Tiflis, the disease carried off none but those belonging to the lower classes, which may be attributed to their irregular manner of living, and the little precaution they took to guard against it. Although this year there have been several cases of cholera at Tiflis, the inhabitants have not been struck with the panic which in 1830 made them abandon their homes, but they remained relying upon the measures taken to stop the disease by the authorities. In the Caucasus, — the theatre of war, the remedies and precautions have been so effectual that at the end of July, the bulletins contained no new cases. Nevertheless some symptoms had appeared in the lines of the Kumschi and the advanced posts of Ischepachenski. On the right flank of the line of the Caucasus and the eastern coast of the Black Sea, not the slightest indication of the disease had been discovered.

Letters from Odessa of the 22d of August, mention that the cholera had almost entirely subsided at Tiflis, and had lost much of its intensity at Taganrog. On the other hand, it had manifested itself at Rostoff, Marianopolis, and other towns of Southern Russia. At Rostoff, in less than three weeks, it had swept off 2,000 persons out of a population of about 8,000. The invasion of the malady had caused so great a terror, that all communication between Rostoff and Odessa was interrupted, the postmasters along the road having abandoned their establishments.

LONDON AND PROVINCIAL MEDICAL DIRECTORY.

THE Editors of the London and Provincial Medical Directory have addressed a circular to all legal members of the profession requiring them to forward their names, addresses, qualifications, &c. for the volume of 1848. As the object of this work is to supply an accurate list of all members licensed to practise in Great Britain and Wales, we most strongly recommend our readers to supply the information required, whether the circular has or has not reached them.*

Some have complained of the inaccuracies of the preceding volumes, forgetting that these inaccuracies must have resulted from the neglect or indifference of the practitioners whose names and qualifications were either misdescribed or omitted. We have, in the performance of our editorial duties, derived the greatest assistance from this

work; and we think no member of the profession, who desires that a broad line of distinction should be drawn between legal practitioners and quacks, can hesitate to give to it his support.

In all cases the *date* and *place* of qualification should be stated, as these are at present the only testimonials of a legal title to practise.

We are glad to perceive that there will be a separate list of those who call themselves professional men, but who decline to state their qualifications. If, therefore, their names become mixed with those of quacks, it will be their own fault.

We will throw out one suggestion. It would be useful, in addition to the general list, to follow the practice adopted by the editors of the Law Directory, and print a list of members practising in all the *principal towns*, the names of which might be alphabetically arranged.

NAVAL APPOINTMENTS.

SURGEONS—Peter Niddrie, M.D. to the Asia; John Gallagher, to the Arab.

Assistant-surgeons—Dr. Henry Richardson, to the Spider; Thomas M. Costello, to the Excellent; John H. B. Collings, to the Oberon; H. C. J. Wilson, to the Asia; Richard Butler, to the Arab; James J. Ayerest, and William Evans (b), to the San Joset; John Cotton, and Richard B. Power, to the Victory; William Domville, to Greenwich Hospital.

APOTHECARIES' HALL.

NAMES of Gentlemen who passed their Examination in the Science and Practice of Medicine, and received Certificates to Practise, on Thursday, Sept. 9, 1847.—Henry Davis Benwell—Robert Blaikie, Oswestry.—William Pritchard, Abergavenny—Henry Davis, Birmingham—James Payton Badley, Dudley—Joseph Thomas Clover, Aylsham, Norfolk—William Leyson Thomas, Neath, Glamorganshire—Polliott James Sandford, Newport, Shropshire—Thomas Horn, Birkenhead.

INTEMPERANCE IN DUBLIN SIXTY YEARS AGO.

SIR W. PETTY, who wrote in the year 1682, when Dublin contained but 6025 houses, states that 1200 of them were public-houses, where intoxicating liquors were sold. In 1798, in Thomas Street, nearly every third house was a public-house. The Street contained 190 houses, and of these fifty-two were licensed to sell spirits. Among the upper classes, the great consumption was claret, and so extensive was its importation, that, in the year 1762, it amounted to 8000 tons, and the bottles alone were estimated at the value of £67,000.

* Address,—46, Princes Street, Soho.

OBITUARY.

On the 12th inst., at his residence, 28, Bedford-square, George Darby Dermott, Esq. aged 45, Lecturer on Anatomy and Surgery.

Selections from Journals.

DUTIES OF PRACTITIONERS IN REFERENCE TO THE POOR.

THERE is one class of patients who will meet you at the very threshold of practice, as they generally fall into the hands of the young practitioner. *These are the poor.* In large cities medical services are secured to them through dispensary arrangements, public charities, and public clinics—but in country places they are wholly dependent upon the physician. And here let me pause to say, not in a spirit of boasting or complaint, nor with any pharisaical show, but in truth and self-gratulation, that there is no profession which bestows more time, more labour, more expense, and more attention upon the poor than our own. It is purely one of usefulness and of Christian charity. As such, gentlemen, always esteem it, always sustain it. It should have no other object. How true is it here, that it is more blessed to give than to receive! This application to our profession is peculiarly emphatic:—"You must benefit others first, or you cannot do good to yourselves." This should be the motto of our profession, as it is the secret of success. It shone forth in the life-time of the eminent Pott, and in these memorable words illuminated with a burst of glory the last flickering of his existence:—"My lamp is nearly extinguished; I hope that it has burned for the benefit of others." In your early intercourse with the poor, exercise your profession as if you were the debtor, which you really are. Remember they willingly accept your immature services at a time, perhaps, when the more wealthy would not confide in you; at a time, too, when you are acquiring very important information—the manner of entering the sick chamber, the tact of examining patients, the method and order of interrogation, the mode of prescribing medicine, diet, drinks, and the knowledge of the numberless minutiae connected with the treatment of disease. They thus afford you valuable opportunities of clinical instruction, and of preparing yourselves for the proper exercise of your profession. You there acquire that practical knowledge of the power and application of medicines, that facility of recognizing symptoms, that happy readiness in the sick room, that promptness peculiar to the enlightened physician, which infuse confidence both in your patients and yourselves. Your success in treating the diseases

of the poor, is the first and certain step to gain upon the confidence of the rich,"—*Dr. Ailee's Valedictory Address, British American Journal.*

PATHOLOGY.

CASE OF FATAL PHLEBITIS OF THE INFERIOR VENA CAVA. BY J. BLACK, M.D.

M. W., aged 26, unmarried, a domestic servant, but who had led a somewhat wandering and irregular life, was admitted on the 14th August, 1846, into the Manchester Union Hospital, labouring under sub-acute rheumatism, of the fibrous character, attended with simple derangement of the stomach and bowels. Under treatment, she was entirely relieved from her rheumatism; and, on the 24th, was considered so far convalescent as to be permitted to leave her bed during the day. On the 20th she complained of a pain in the right hypochondrium, for which a blister was applied. This pain was in a short time relieved. On the 4th of September she was seized with the diarrhoea that more or less prevailed at that season as an epidemic. Within the subsequent four days her diarrhoea had entirely ceased under the use of diacetate of lead and opium; but, along with its cessation, her abdomen began to be very tense and painful, and scarcely allowed the least pressure of the hand. In spite of large emollient poultices and cooling saline medicines to act on the kidneys, the swelling and tension continued to increase, with much restlessness and pain.

On the 17th the conclusion arrived at was, that the case was one of rapid and diffuse peritonitis of an adynamic nature, with effusion into the cavity of the abdomen. This result was supposed to be occasioned by the quick stoppage of the diarrhoea and the repellant effect of cold while attempting to go about at the time she was constitutionally influenced by mercury: she was, besides, of a delicate frame of body, and there were some reasons to think that she had been previously intemperate. Her skin was, at this stage, warm throughout; her abdomen rather hot to the hand; there was thirst; little urine; the bowels were nearly regular; her tongue clean, but dryish, and her pulse small, frequent, and irregular. She, however, had no cough nor dyspnoea, nor could any bruit be heard in the region of the heart. Her lower limbs were disposed to oedema since she came in to the hospital, and at this period they had become much infiltrated up to the hips, though they retained their natural warmth. Under the treatment employed there was no amelioration to the increasing tumefaction and tension of the abdomen, and to the swelling of the legs and thighs. In addition to the en-

largement, which was early evidently due to a fluid, from the very characteristic fluctuation elicited, there was, by the 24th, observed all over the anterior aspect of the thorax and abdomen well-marked enlargements of the epigastric and external mammary veins, both of which sets of vessels were perceived to inosculate freely and directly with each other.

This appearance in a few days became still more evident; the main branches became larger than swan-quills; and, in passing the finger across the tract of many of them, a perceptible depression was felt, equal to the depth of half the cylinder of the respective veins, while they became distended below, and relaxed above the point of pressure. Some internal obstruction to the return of venous blood to the heart from the lower parts of the body was now evident, but on what it depended was a problem not easy to resolve. No tumor had been detected, or even suspected, in the abdomen during the attack of diarrhoea, and nothing could be elicited from the chest or heart that could account for this sudden and enlarged and vicarious circulation. The only conclusion that was come to at the time was, that the rapid effusion into the abdomen, along with the tensile resistance of the parietes, had acted as a counter-pressure on the abdominal cava, and so impeded its transmission of the blood from the inferior parts of the body. Subsequently the disease suffered no remission; for, though the bowels acted freely when required, and the urine was kept to a normal amount of excretion, with a diminution of the tension and pain in the abdomen, yet the amount of effusion seemed to increase with more encroachment on the capacity of the thorax; the anastomosing veins continued enlarging, and the vital forces of the body and powers of the mind evidently began to give way under the incumbent affliction.

On the 8th of October regular medicines were omitted, and only extemporary anodynes and diuretic carminatives were given along with strengthening broths and a little gin daily. The patient struggled on till the 19th, when it was thought expedient to attempt to give her relief by paracentesis, which was performed by Dr. Francis, and sixteen pints of clear amber-coloured serum, without any flakes, were taken away, leaving a considerable quantity still in the abdomen. Nothing but very temporary relief was the result of this measure, and she expired very quietly on the 21st.

Post-mortem on the 23d.—The lungs were healthy, without pus or tubercles; the left was posteriorly condensed, apparently from moribund congestion; the heart was natural, only the right ventricle was less than the left; the valves were normal; the

inner surface of the right auricle, and the corresponding ostium, with that of the base of the pulmonary arteries, were much stained on the depending half by supposed imbibition; there were about four ounces of red-coloured fluid in the pericardium; the liver was somewhat enlarged, obtuse at its margins, and slightly uneven over its peritoneal covering; on section, it was very buffy, with the light-coloured element of the organ, or of the acini much hypertrophied, while the interlobular tissue was hyperæmiated. An encysted depot of thick creamy pus, about two inches in diameter, was found in the posterior and upper part of the viscus, nearly in a line over the trunk of the inferior vena cava, and close to the hepatic vein; the sac seemed a little dense in its walls, and its interior was villous and soft; the kidneys were normal, but hyperæmiated; a urinary cyst was in the lower end of the left, and its dark sanguineous condition might have arisen from post-mortem gravitation, or from retrograde congestion from obstruction in the inferior cava. The stomach and intestines were much distended with gas, and had a dark grumous magma throughout the whole tube to the caput coli. The interior coat was thin, not villous; in some places of the ileum it was uneven, but no ulcers or cicatrices were observed. There were about four pints of yellowish limpid serum in the peritoneal cavity, but the lining membrane was natural, with the exception of some suffused and arborescent patches of capillary blood; the bladder was empty, and the uterus was natural, with the ovaria dense and enlarged; the vena cava inferior, from the opening in the diaphragm to its junction, within a short space, with the iliac veins, was filled with irregular lymphous coagula and shreds, which adhered firmly to the inner coat of the vessel, and were connected with similar deposits in the azygos, renal and lumbar veins, but not to the same extent. Pus was found lodged in several of the upper parts of the vena cava inferior, but especially where it passed under the liver, and just through the diaphragm; the right ovarian vein was much enlarged, and somewhat tinged with blood; so was the left renal vein. The whole condition of the cava thus disclosed showed that the returning amount of blood through the vessel must have been, for some time previous to death, much interfered with, if not totally obstructed.—*Provincial Medical and Surgical Journal*.

[Appended to this case are several interesting observations with regard to the probable causes of the several lesions discovered after death; together with an analysis of previously-recorded instances of obstruction to the circulation through the inferior cava.]

MEDICINE.

DEATH FOLLOWING A WOUND OF THE HEART, AFTER EIGHT HOURS. BY W. F. ALEXANDER, M.D. OF CHARLESTOWN.

A DISPUTE occurred between two individuals, which resulted in the death of one of the parties under the following circumstances:—The deceased, whilst making an attack upon his opponent, received a blow upon his back, which immediately arrested his attention: he turned, and pursued the man who inflicted it. His opponent followed, and while in the rear, and on the left side of the deceased, was seen to strike him upon the chest with his left hand, in which he held an open knife. The deceased was seen instantly to apply his hands to his side, saying, "I am a dead man!" staggered a few steps, and fell to the ground in a fainting condition: there was but little hæmorrhage externally. He was borne to a neighbouring house, where, after a short time, under medical treatment, some reaction ensued: and he survived until the evening of the fourth day, living about seventy-eight hours after the infliction of the mortal wound.

Post-mortem examination.—Two wounds found upon the left side, over the thorax: one below the clavicle, and over the second rib: no vessels of consequence opened: the wound about five-eighths of an inch in length, and considered of but little importance. The second wound over the fifth rib, three fourths of an inch from its junction with its cartilage. On opening the chest, the left cavity was found filled completely with bloody serum, the left lung collapsed, and bands of lymph, apparently of recent formation, united the pleura costalis to the pleura on the opposite side of the cavity: evidence of intense inflammation existed. Upon examining the internal face of the ribs, an incision was found corresponding to the wound of the surface, the rib itself severed, and the intercostal artery divided. Continuing the examination, the instrument was found to have traversed the cavity of the thorax, entered the pericardium, passed entirely through the heart, about an inch from its apex, opening and passing through the left ventricle, and wounding the diaphragm. The pericardium contained some ounces of bloody serum. There were few coagula either in the pericardium or in the cavity of the thorax. There was no hesitation in ascribing to this wound the cause of death. The instrument used in inflicting the wounds was the large blade of a coarse pocket-knife, not more than two inches and a half in length.

The preceding is interesting, as it adds another to the cases on record, where an individual has survived for hours, and performed certain acts, after one of the cavities of the heart has been laid open; also affording an instance of a wound inflicted by the

left hand, a circumstance of comparatively unfrequent occurrence, and which might have occasioned some difficulty on the examination, from the situation and direction of the wounds, had there been no witnesses of the act."—*American Journal of the Medical Sciences.*

MIDWIFERY.

CASE OF SPONTANEOUS RUPTURE OF THE UTERUS IN THE THIRD OR FOURTH MONTH OF PREGNANCY. CONGENITAL ABSENCE OF MUSCULAR WALLS OF UTERUS ON ONE SIDE OF FALLOPIAN TUBE AND OVARY, AND OF THE OS TINCÆ.

THE following remarkable case is related in the Buffalo Medical Journal (Sept. 1846). An unmarried girl, æt. 17, was suddenly seized with pain resembling colic, and soon died.

On post-mortem examination the following appearances were observed. Cavity of the abdomen filled with coagulated blood, surrounding a fœtus of the third or fourth month. Uterus ruptured along its right side, from the fundus to near the neck. Left ovary and fallopian tube entirely wanting. Right ovary and fallopian tube were present, but the latter entered the uterus nigh to the neck, and the ovary was correspondingly lower than natural.

The uterus appeared to be developed to the size of the third or fourth month of gestation. The placenta was attached near the fundus upon the left side. On the side of the uterus where the rupture occurred the walls of the organ were extremely thin. At the time of the rupture there seemed to be nothing but the peritoneum, and in the immediate neighbourhood the friability was such that it was readily torn by the fingers with slight force. On the left side the walls were of the usual thickness, but did not present the common fibrous appearance. On examination of the neck no aperture could be found, nor was there any trace of an os tincæ. The neck resembled a tendon in appearance, but was of less density. There was no communication between the cavity of the uterus and the vagina. Professor F. H. Hamilton, to whom the ruptured uterus and fœtus were sent, gives the following further description of the parts. "The uterus is torn near the attachment of the right broad ligament; walls on this side excessively thinned, so much so in some places as to leave little else than peritoneum; opposite side of uterus about $\frac{1}{2}$ of an inch in thickness, and of usual consistence. Length of body of uterus 3 inches; breadth, $2\frac{1}{2}$ inches; cervix uteri 2 inches long, firm and broad at base, but gradually and regularly tapering to a thin, flattened extremity, covered by a smooth mucous membrane. Upon careful

examination of the cervix, longitudinally and transversely, no channel, or line, or cicatrix, indicating the presence of an os tincæ, could be discovered. The structure is rather more dense than that of the uterus in its natural state, but its density is uniform; it is not scarred or corrugated, nor does it present any evidence of its being a result of disease. The mucous coat which covers it lies free, and can be as easily removed as such membranes usually may be. The right fallopian tube terminates about the middle of the right side of the uterus; right ovarium is larger than natural, but apparently healthy. On the left side there is no broad ligament, no fallopian tube, nor ovarium, but the peritoneum covers it as smoothly as in front." The girl had always enjoyed good health, and had menstruated regularly three years, until the last three months.—*American Journal of the Medical Sciences.*

CHEMISTRY.

SUGAR IN THE MILK OF CARNIVORA.

IN a former report we noticed the experiments of Dumas tending to prove that the milk of carnivorous animals, fed exclusively on flesh, contains no sugar of milk. This subject has been recently investigated by Benesch, whose experiments show that Dumas's conclusion is incorrect, and that sugar is always present; but that in consequence of the mode of analysis pursued, it undergoes changes which render its crystallization impossible. The experiments were instituted on two large bitches, which were placed on an exclusive flesh-diet from the fourth day after their delivery.

a. The milk of the bitch (A), after being fed for 8 days on the fresh flesh of an old horse, not only yielded indications of sugar by Trommer's test, but also perfectly formed, transparent, colourless crystals of milk-sugar.

b. The milk of the same animal, after 12 days' flesh-diet (goats'-flesh containing very little fat being used from the ninth day), yielded tuft-like crystals of milk-sugar, which, dissolved in a little water, recrystallized in rhombic tablets.

c. For the succeeding 15 days the animal was fed on asses'-flesh. The milk exhibited the same relations as in b.

d. The milk of the bitch (B), after five days' flesh-diet, yielded indications of the presence of sugar by Trommer's test.

The milk in all these instances had an acid reaction, dependent, according to Benesch, on the presence of acid phosphates of lime and magnesia.

When Haidlen's mode of analysing milk was used, crystals of milk-sugar could not always be obtained, although Trommer's test showed the actual presence of that constituent. This non-occurrence of the crystals is prob-

ably occasioned by the milk-sugar becoming converted into grape-sugar by the prolonged action of the free (phosphoric) acid at a temperature of 212°.—*Dr. Day's Report on Chemistry, 1847.*

ANATOMY.

STRUCTURE OF THE IRIS.

THE iris is undoubtedly contractile, and the anatomical characters of its principal tissue so nearly resemble those of unstriated muscle, that it may be considered a variety of that tissue. Its fibres are loaded with nuclei which are rather rounder than those of unstriated muscle, and more loosely attached to the contractile material. The principal direction taken by the fibres is towards the pupil, although they are more or less meandering and interlacing in this course. Arrived near the pupil, they appear to join, and form indistinct arches. In many instances it is easy to detect a set of circular fibres, either gathered into a principal bundle near the pupil or more diffused, but always lying in front of the others. These seem to answer to the circular fibres of the bird's iris, which are of the striped variety, and occupy the front of the membrane. There may also be usually distinguished in the very thin margin of the pupil, an arrangement of fibres more circular than radiating. The iris is so vascular that some anatomists have considered it erectile, and have erroneously ascribed its movements to this property. But its vessels are slender and delicate, and resemble those of the unstriated muscle. They are derived chiefly from the two long ciliary arteries, which, on approaching it, bifurcate, and form a circle around it, whence pass inwards a great number of minute branches, which form loops near the pupillary margin.—*Todd and Bowman's Physiology.*

THE WIDE RANGE OF SCIENTIFIC PURSUITS.

BEAUTIFUL as nature is, thrilling as are for the listening ear the notes which science strikes, there is for man's spirit no rest in them. Every step leads on the unsatisfied inquirer to one beyond itself. The nicest mechanical arrangement of the particles of matter does but force us to contemplate those subtler powers by whose action magnetic relations and chemical affinities are next developed. Exhaust their range, and still there lies palpably beyond them, the mystery of vital powers. Follow that to its highest source, and still we have but reached the first limits of those mightier energies of reason, conscience, and will, of which we feel within ourselves the living action.—*Bishop Wilberforce.*

DUTIES OF MEDICAL STUDENTS.

THERE is one duty which you owe to society, which you will not neglect, and that is to disseminate as widely as possible a knowledge of the laws and conditions of health; the great principles of hygiene on which the prosperity of towns and cities, and wide districts of our country, very materially depend. You can do much by conversation and lectures, to spread around you an acquaintance with the elements of popular anatomy and physiology, and in this way strike a blow at the very root of the wide-spreading tree of quackery, which will wither it at its source. To you, especially, will the community look, to inform and enlighten them, in relation to the best means of preserving the public health; of preventing the spread of contagious and infectious diseases; the influence of trades and occupations; the effects of different sort of food, of dress and amusements; the nature, causes, and cure of those diseases, which attack the lower animals, and vegetable as well as animal life; the influence of soil, and climate, and season; of geological formations, and geographical localities; the question of quarantine; the best modes of warming and ventilating houses; the establishment and regulation of schools and seminaries of learning. You will be called upon to instruct judges, and lawyers, and courts of law, in relation to many important questions connected with hygiene, and medicine, and surgery, fractures and dislocations, and poisons; and your opinions will, if well sustained by facts and reason, be decisive, in turning the scale, and shaping the verdict of the jury. Besides all this, you are to act your part as good citizens, patronizing every worthy object; aiding in all public enterprises involving the welfare of the masses; taking a personal interest especially in all improvements calculated to benefit the sanitary condition of the people; contributing freely to the support of education and religion—the great bulwarks of our safety; in short, doing all that the broadest philanthropy or the most interested benevolence can suggest.”—*Dr. C. A. Lee's Address, British American Journal.*

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	29.77
“ “ Thermometer	54.3
Self-registering do. ^a max. 89.7 min. 29.5	
“ in the Thames water — 63.2 —	58.5

^a From 12 observations daily. ^b Sun.

RAIN, in inches, 0.09: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 5.5° below the mean of the month (57.8°).

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Sept. 4.

BIRTHS.	DEATHS.	Av. of 5 Sem.
Males.... 652	Males.... 526	Males.... 479
Females.. 643	Females.. 523	Females.. 461
1295	1051	940

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—Registrars' Districts, 129. Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,336)	133
NORTH—St. Marylebone; St. Pancras; Islington; Hackney	210
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London	213
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar	260
OUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich	245
Total	1051

CAUSES OF DEATH.

CAUSES OF DEATH.	1051	Av. of 5 Sem.
ALL CAUSES	1051	940
SPECIFIED CAUSES	1049	935
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	351	226
Sporadic Diseases, viz.—		
2. Dropsy, Cancer, &c. of uncertain seat	122	103
3. Brain, Spinal Marrow, Nerves, and Senses	138	157
4. Lungs and other Organs of Respiration	202	226
5. Heart and Bloodvessels	27	25
6. Stomach, Liver, and other Organs of Digestion	101	94
7. Diseases of the Kidneys, &c.	7	8
8. Childbirth, Diseases of the Uterus, &c.	8	10
9. Rheumatism, Diseases of the Bones, Joints, &c.	10	7
10. Skin, Cellular Tissue, &c.	0	2
11. Old Age	43	50
12. Violence, Privation, Cold, and Intemperance	40	28

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	23	Convulsion	37
Measles	40		
Scarlatina	27	Bronchitis	25
Whooping-cough ..	15	Pneumonia	34
Diarrhoea	108	Phthisis	124
Typhus	77	Dis. of Lungs, &c. ..	6
Dropsy	9	Teething	13
Sudden deaths ..	12	Dis. Stomach, &c. ..	10
		Dis. of Liver, &c. ..	11
Hydrocephalus ..	30		
Apoplexy	15	Childbirth	6
Paralysis	20	Dis. of Uterus, &c. ..	2

REMARKS.—The total number of deaths was 111 above the weekly average. The deaths from diarrhoea were not so numerous as in the preceding week, but, like those from typhus, far exceed the average mortality of these diseases at this season of the year. Infants and young children are chiefly cut off by diarrhoea,—adults by typhus fever.

Lectures.

LECTURES
ON THE
DISEASES OF INFANCY AND
CHILDHOOD,

Delivered at the Middlesex Hospital,

By CHARLES WEST, M.D.
Physician-Accoucheur to, and Lecturer on Mid-
wifery at, the Middlesex Hospital, and Senior
Physician to the Royal Infirmary for Children.

LECTURE III.

*Diseases of the Spinal Cord—their study
rendered more difficult by the tender age
of children.*

Irritation and congestion of the cord.

*Inflammation of the membranes of the cord
—sometimes epidemic—not common as a
sporadic affection. Illustrative cases.—*

*Inflammation of the substance of the
cord—extremely rare in its acute form
—in its chronic form gives rise to symp-
toms similar to those which occur when
bones of the spine are diseased. Cases.*

*Trismus—extremely rare in this country—
symptoms—post-mortem appearances—
uncertainty as to natural vascularity of
the cord in early infancy. Causes of the
disease—influence of vitiated air—treat-
ment almost hopeless.*

GENTLEMEN,—At the commencement of these lectures, I called your attention to the predominance of the spinal over the cerebral part of the nervous system, as constituting one of the grand characteristics of early life. Since then, our daily course of inquiry has brought before us numerous confirmations of this truth, and has shewn us how slight a disturbance of the functions of the brain may suffice to destroy the harmony of those which belong to the spinal cord.

This morning we pass from the consideration of those cases in which the brain is the original seat of disorder, and in which the spinal cord suffers only secondarily, to the study of others, in which that organ is itself primarily affected. I need not remind you how much obscurity hangs over the ailments of the spinal cord at all periods of life; but in the young subject, this is not a little increased by the difficulty that attends the observation of some of those symptoms which would be obvious enough in the adult. Thus, for instance, while impairment or loss of the locomotive power in the grown person could hardly escape our notice for a moment, it might fail to attract much attention in a young child who often totters in his gait, or even becomes unable to walk, if from any cause his health should fail. Or, again, the impaired sensation, or the vague

pains in the limbs, which the adult would be sure to tell us of, would be but ill described by a child, even though it had long been able to talk, while terror might cause it to cry if any attempt were made to examine its back, and might thus prevent our ascertaining the presence or absence of tenderness of the spine. These are difficulties, however, which patience and tact will overcome; for not only the diseases of the spinal cord, but the symptoms by which they manifest themselves, are much the same at all ages; the chief difference being that in the one case they strike the eye even of the careless, while in the other, careful observation is necessary for their detection.

Irritation of the cord, however produced, gives rise in the child, as well as in the adult, to impairment of the motor power. A little boy, between two and three years old, remarkably strong and healthy, was observed, without any obvious cause, to fail in his general health, and at the same time to totter in his gait, to become indisposed to move, and, at last, almost entirely to cease walking; and this impairment of his power of walking was quite out of all proportion to the signs of ill health by which it was attended. After watching him for a time, it was discovered that the child had become addicted to the practice of masturbation. This was put a stop to, and he soon regained his health, and with it his power of walking.

The mischief to the cord may be more serious, and the symptoms will then present a corresponding increase of severity.

In May 1845, a little girl, four years old, was brought to me by her mother, who said that ten days before, the child had had a fall on her back, while left in the charge of a girl, and that on the following morning she was unable to stand or move, unless supported; and that she had ever since continued in the same condition. Her appearance was rather anxious; her face slightly flushed; skin warm and dry; tongue slightly furred; pulse frequent, and with power. If placed on her feet she clung hold of her mother, sank down into a stooping, half-squatting posture, and immediately began to cry. She could walk if firmly supported, but hurriedly and unsteadily, stepping on her toes, her legs moving in a semicircle with her toes turned inwards, and one foot being put down just in front of the other. On examining the spine, the integuments from the 10th to the 12th dorsal vertebra presented a little puffiness, and there was very great tenderness of the spine in that situation; and even when not touched, the child complained of pain in her back. There was no appetite, but great thirst; the bowels were constipated; the appearance of the urine was natural, and neither faeces nor urine were voided unconsciously.

She was cupped on the loins to $\frac{3}{4}$ iv. and on the following day was much relieved, moving her legs more readily, and suffering much less from pain in the back. On the 17th she was able to stand, and could walk a little without suffering. Attention was paid to keep the bowels open, and in a few days she was quite well.

It is probable that in this case nothing more serious was the matter than some degree of congestion of the spinal cord or its membranes; but we likewise meet occasionally with instances of inflammation of these parts.

Inflammation of the membranes of the spinal cord prevailed epidemically in many parts of France, from 1842 to 1844. The victims of the disease, which proved very fatal, were almost entirely youths a little past the period of puberty. An epidemic of a similar kind is now prevalent in many of the hospitals and workhouses of Ireland; but in that country boys under 12 years of age have been almost the only persons who have suffered from it. The arachnoid of the spinal cord has been found in every instance to be the part chiefly affected, though in most cases the membranes of the brain seem to have been slightly involved in the disease. Notwithstanding the great extent of the inflammation of the membranes of the cord, and the effusion of lymph beneath them, the nervous substance appears to have been comparatively seldom attacked by it, and never with much severity. The disease generally came on very suddenly, and its course was often extremely rapid, some patients dying in twenty-four hours, while few survived the fourth day. Severe pain in the abdomen, attended with vomiting and purging, and a condition of general collapse, marked the outset of the affection. A state of reaction soon succeeded, the surface in the course of a few hours becoming hot, the pulse full, and its frequency varying from 120 to 140, while the face assumed a tetanic expression, and the head was retracted and firmly fixed. General convulsions, or coma, succeeded to this condition, and failure of deglutition, with a slow and laboured pulse, followed as the immediate precursors of death.

I must refer you to Dr. Mayne's account of this epidemic, which is contained in the Dublin Quarterly Journal for August, 1846, for I have not seen the disease in any other than a sporadic form, and even then but seldom. Perhaps, therefore, I shall convey to you a more truthful impression of the general characters of inflammatory affections of the spinal cord and its membranes, by relating to you a few of those instances that have come under my own notice, rather than by attempting to draw a general por-

traiture of them from too small a number of examples.

A boy, aged 11 years, of phthisical family, who seven months previously had had severe and long-continued attacks of headache, was greatly distressed by hearing of the sudden death of a relation. On the following day he had slight nausea, with pain in the head, but in a day or two he suffered more from pain in his limbs, especially in the calves of the legs, and also shooting from the situation of the coccyx to the middle of the back. He complained, moreover, of a constant pain at the epigastrium, which, as well as that about the lower part of the back, was always much aggravated when the bowels acted, they being, however, usually constipated. These symptoms were associated with great weakness of the legs, which he dragged when walking, and reached the Children's Infirmary, from which his home was about a mile distant, with much difficulty. On the following day I visited him, and ascertained, on examining the spine, that there was considerable tenderness on pressure from about the middle of the dorsal vertebrae to the apex of the sacrum, but greatest about the lumbar region. There was no intolerance of light, but very distressing sense of giddiness, complete loss of appetite, constant sensation of sickness, and a nasty taste in the mouth. The intellect during the whole illness was only once affected, and then but for a few hours, and the child was remarkably acute, and described his different sensations with great exactness.

The pain in the loins was relieved by cupping, but on the next day the headache was increased in severity, and there was some subsultus of the tendons of the forearms, and a good deal of twitching of the hands. This symptom disappeared after he had been depleted copiously by leeches to the head, and after his gums had begun to be affected by mercury, which was freely administered to him; but his pulse, which during the whole of his illness never exceeded 75, sank to 60 in the minute, and its beat became irregular. As the mouth became decidedly sore, first the shooting pains in the back and limbs ceased, then the pulse became regular and rose in frequency, then the epigastric pain disappeared, and was succeeded for a time by a sense of weight there. By degrees the tenderness of the spine diminished and finally ceased, and the headache grew less, but his legs long continued weak, so that he could not tread firmly, and the slightest noise or any kind of over-exertion, brought on an immediate increase of his sufferings. A seton was put in the back of his neck, and the influence of mercury on the system was cautiously main-

tained for four months before the boy appeared sufficiently well to justify the discontinuance of remedies.

But the disease may run a more acute course, and to a less favourable termination.

A little boy, 1 year old, who had cut four incisor teeth, and whose health had been habitually good, was brought to me by his mother after three weeks' illness. She told me that he had been suddenly seized with great fever and heat of skin, accompanied, after the lapse of four days, with violent screams. At the outset of his illness he had been cupped at the back of his neck, and leeches had been applied to his head without amendment, and for a week before I saw him all treatment had been discontinued. The child then lay in his mother's lap, frequently crying with a low distressed whimper; his face was pale but occasionally flushed, his head thrown back so that the occiput and back of the neck were nearly in contact with each other. The sterno-mastoid muscles were rather rigid, though there was no trismus. The hands were clenched, the thumbs drawn into the palm, and occasional attacks came on in which he uttered a scream, and then bent his body back into an arch. The child sucked eagerly, but frequently dropped the nipple as if in pain; the pupils acted naturally; the pulse was frequent, small, and hard. In the course of the succeeding day frequent convulsive twitchings and startings of the limbs took place, affecting the left arm more than any other part. His face grew habitually pale and more sunken, and the spine became habitually, though slightly, curved forwards, notwithstanding which, occasional attacks of opisthotonos still occurred. The pupils still acted well, but a new symptom appeared, in the laboured breathing, which sometimes became so difficult that the child seemed almost choking, while phlegm collected in his throat, which he appeared unable to get rid of. This dyspnoea would almost imply that the inflammation had been gradually travelling upwards till it began to involve the origins of the cerebral nerves—a supposition still further confirmed by finding two days afterwards that the eyeballs were in a state of constant convulsive rotation. After this, which was the fifth day from that on which I first saw the child, he was not again brought to me; but, though this case is incomplete, it yet helps to fill up the portraiture of the disease. To complete it, however, I must relate one instance more in which the results of examination after death confirmed the diagnosis.

Six years ago I saw a little boy, 5 months old, of whom his mother gave me the following history:—A month before, he had been attacked with shivering (an unusual occurrence in a young child), and, in the

night following this seizure, had many fits, during which he screamed much and became very stiff. After they had continued for three days, returning at intervals of an hour or half an hour, a little diminution in their severity followed the use of some medicine prescribed for him by a surgeon; but, even when I saw him, ten or twelve often occurred in the 24 hours, though a day would now and then pass without any. The fits were described as presenting the characters of opisthotonos, though in a less marked degree than when they first came on. The retraction of the head with which they were attended at first subsided after their cessation; but in the course of two or three days a tendency to keep the head constantly thrown back became evident, and for a fortnight the head had never been brought out of that position. The mother thought, too, that the child had been blind for that period.

The child appeared well-grown and well-nourished, and the face was not expressive of particular suffering, but the head was drawn back so that the occiput rested between the shoulders, while the back was bent forwards in a state of permanent emprosthotonos; the legs were drawn up towards the abdomen, the palms of the hands turned backwards and outwards, the fingers clenched, and the thumbs drawn into the palm. On turning the child round on its face, its body formed a complete arch resting on the chin and knees. The whole spine was very tender, and this tenderness was greatest about its upper part. The pupils were dilated and immoveable; suction was difficultly performed, though there was no trismus, but the child vomited every thing it took almost immediately. The pulse was at this time too rapid and too feeble to be counted, and the child died in a fit of convulsions twenty-four hours afterwards.

On examining the body, blood was found effused, though not in any considerable quantity, within the spinal canal, but external to the dura mater, from the third cervical to the third dorsal vertebra. A thick layer of white lymph was present both under the arachnoid and in its cavity along the whole posterior surface of the lumbar and dorsal portions of the cord, and likewise existed in the cervical portion, though in a less degree. Anteriorly, blood and lymph occupied the whole cervical portion of the sac of the arachnoid, and were effused beneath the membrane; but in the remainder of the front of the cord there were merely patches of lymph beneath the arachnoid. The substance of the cord was apparently healthy. On lifting up the cerebellum, a considerable quantity of serum, with flakes of lymph, escaped from the base of the

skull, and the whole under surface of the cerebellum had a uniform coating of white lymph at least a line and a half in thickness, which extended over the medulla oblongata, and was continuous with the deposit of lymph along the spinal cord. The lateral ventricles of the brain were much distended with fluid, in which large irregular masses of yellow lymph were floating. The corpora striata and the fornix were much softened, but the rest of the brain and the membranes at its convexity were quite healthy.

It can scarcely be necessary that I should comment on these cases, either to point out to you the many respects in which inflammation of the spinal cord differs from that of the brain, or to insist on the absolute necessity of active antiphlogistic treatment being adopted at the very outset of the disease.

I apprehend that in the case that recovered, as well as in the other two which terminated fatally, the membranes were chiefly, if not exclusively, affected. I have not met with any instance of *acute inflammation* and consequent softening of the substance of the *spinal cord*, although there are many such on record. It has been supposed that paralytic symptoms usually attend this affection, while stiffness and spasm of the muscles characterise spinal meningitis; but though this is probably true in many instances, yet it does not by any means hold good in all. Three cases are related by MM. Rilliet and Barthez, in which the disease ran its course with symptoms of tetanus and trismus, which continued up to the time of the patient's death. In one of these cases the child died in 36 hours; in the second, in 96 hours; but in the third, a temporary remission having occurred, the patient survived for thirteen days.

I select from Dr. Mauthner's valuable Treatise on the Diseases of the Brain and Spinal Cord in Children, a very characteristic case of acute inflammatory softening of the spinal marrow.*

A girl aged 11 years, whose occupations compelled her to remain for many hours daily in a sitting posture, with her head bent forwards, while she was at the same time much exposed to currents of cold air, was seized after she had followed this employment for three weeks, with dragging and tearing pains in the back of her neck. As these pains increased, voluntary power over the arms became impaired, and, the paralysis increasing rapidly in spite of the application of leeches to the back of the neck, she was admitted into the Hospital for Children at Vienna, under Dr. Mauthner's care, on Dec. 26th. Both arms were

at that time completely palsied, flaccid, cool, and almost insensible; the lower extremities still obeyed the will, but the girl was unable to stand firmly. The mind was perfectly clear, the appetite good, deglutition easy, and pulse natural; and in these respects her condition continued unchanged to the very last, except that the pulse became very frequent on the day of the child's death. On the 28th, the legs were palsied, and the urine was passed involuntarily. On the 29th, voluntary power over the hands and feet was likewise completely lost, and sensation in them was very imperfect. On the 30th, sensation was perfectly lost in all the extremities. The child had desire to pass feces, the bowels not having acted for three days, but she had not power to do so. On the 31st, the sphincter ani was likewise paralysed, and opened to the size of a shilling. On January 4th, the hardened feces began to fall out of the gaping anus; the respiration was feeble, articulation difficult. On the 6th, the child was in much distress, and for many days had scarcely slept at all; the whole left side of the body was completely paralysed, and the right side of the chest only moved in respiration. Her exhaustion was so extreme that her voice was scarcely audible, but the muscles of the face still retained motion and sensation perfectly, and the intellect was quite clear, though the child died the same night.

The spinal cord presented the only morbid appearance, the membranes being perfectly healthy. The medulla oblongata was as soft as butter, of a yellow colour, not presenting a trace of its natural organisation; and the same condition was presented by the whole of the spinal cord as low as the cauda equina, where it once more resumed its natural appearance and characters.

The *chronic form* of inflammation of the cord will much oftener come under your notice as one of the consequences of caries of the vertebrae. You will remember, too, that this serious result, and the paralysis to which it gives rise, are not produced simply by the distortion of the spine and the mechanical compression of the cord, but rather by the extension to it of the inflammatory action. You have, then, in these cases a double danger to combat, both that which arises from the disease in the spinal column itself, and that which depends on the probable extension to the cord of the disease which began in the bones. The symptoms of the two affections present likewise so many points of resemblance in their early stages, that you can never feel sure that the cord is uninvolved. Of this we have ample proof in those rare cases in which chronic softening of the cord occurs independent of any affection of the bones of the spine. You will find a case that illustrates this fact very

* Lib. cit. p. 421, Case 117.

well, in M. Louis's valuable paper, *On the Condition of the Spinal Marrow in Cases of Caries of the Vertebrae*;* and I will relate to you another still more remarkable instance of it which came under my own notice.

On March 31, 1846, a little girl, aged three years and a quarter, the strumous child of unhealthy parents, in whose family phthisis was hereditary, was brought to me by her mother. Nine months previously, her father having taken her in his arms and tossed her, she suddenly cried out that she was hurt, and for several days afterwards refused to walk, and seemed unable to stand, sinking down on her hams if set on her feet. She made no definite complaint, however; no injury was anywhere observable, and in about three weeks she seemed to have recovered her health, and continued well until the middle of March. At that time, however, her frequent complaints of pain in the neck attracted her mother's attention. The appearance of the little girl, when first placed under my care, was very remarkable; for though the face wore no expression of suffering, yet the neck was so much bent as to give an unusual prominence to the seventh cervical vertebra, and the head was constantly directed downwards. No part of the spine seemed particularly tender, but any attempt to raise the head was forcibly resisted, and seemed to occasion considerable pain. The child walked, though with a tottering gait, and if left alone for a few minutes sank down upon her knees to play. Her constant complaint was of being tired and drowsy, notwithstanding which she slept but ill; her appetite was bad, and her bowels were constipated. I regarded the case as one of incipient disease of the cervical vertebrae, and was anxious to make an issue in the back of the neck, but the parents refused to consent to this proceeding. Medical treatment, therefore, was confined to the administration of the cod-liver oil, and afterwards of the syrup of the iodide of iron; but though no fresh symptoms appeared, the child gradually lost strength. On the 12th of May she was able to walk a distance of nearly half a mile, but on the 14th, though not worse in other respects, she was unable to raise her hands, and was forced to be fed by another person. In the evening she complained of her eyes aching, but nevertheless slept tolerably well till 1 A. M. She then awoke crying and fretful, but on being taken up passed an evacuation, and on lying down again, after a few efforts to vomit, which soon subsided, spoke a few words to her mother, in whose arms she

was lying. After breathing in a sighing manner for a few moments she seemed to fall asleep, and in this sleep died so quietly that her mother was ignorant of it until awakened by her daughter's corpse beginning to grow cold.

On examining the body after death, the brain was found to be quite healthy, with the exception of some venous congestion of the arachnoid. The muscles of the back and the bones of the spinal column were perfectly healthy; but on laying open the vertebral canal, the spinal cord, from a level with the 3d down to the 7th cervical vertebra, bulged considerably, so as completely to occupy the canal, though above and below this its size was natural.

In this situation the two layers of the arachnoid of the cord were firmly connected together by numerous filamentous adhesions, and the membrane itself was opaque and thickened.

The cord in the situation of this bulging had a shining gelatinous appearance, not unlike turbid and badly made jelly, with a yellowish lymph-like matter infiltrated into it. This softening involved the posterior columns of the cord much more than the anterior; the bulging too seemed due to the posterior columns, though the anterior presented some degree of softening.

Three apoplectic effusions were discovered in the spinal cord. The first was situated just below the calamus scriptorius, and was about the size of a lentil; the nervous matter all around being perfectly healthy. The second, which was larger, was just at the commencement of the swelling of the cord, and partially extended into the sound parts. It just shewed through the surface of the cord as big as half a pea, but on longitudinally dividing the cord was seen to be of the bigness of a kidney bean; and the third effusion, just above the termination of the swelling of the cord, was about as large as a big pea. Besides these there were several small ecchymosed spots in the softened parts of the cord, but all the effusions of blood were strictly limited to the posterior columns of the cord.

This case presents many points of interest. The scrofulous diathesis in the family; the probable injury to the spine, followed, for a short time, by impairment of the motor power; the subsequent occurrence of pain in the bended neck, and the fixed position of the head, all seemed to warrant the opinion that the vertebrae were diseased, but all resulted from inflammatory softening of the spinal cord, while the bones were perfectly healthy. The softening of the posterior columns of the cord, and the extravasation of blood into their substance, while the anterior columns were in a state of comparative integrity, are occurrences very remarkable when coupled with the impaired motor

* *Mémoires, ou Recherches Anatomico-Pathologiques.* 8vo. Paris, 1826. VIII. *Mémoire, I. Observ.* p. 411.

power.* Cases such as this are warnings to us to avoid hasty generalisations on physiological subjects; they show us how hard some of the Sphinx's riddles are to read.

There still remains one affection which we must notice in connection with the diseases of the spinal cord, although it is one whose pathology is by no means thoroughly understood. The *trismus* or *tetanus* of new-born children is a malady which though frequent in the West Indian Islands is seldom seen in this country. Three instances of it have come under my own notice, all of which occurred in the Dublin Lying-in Hospital, and I have seen no case of it among my patients at the Children's Infirmary.

The disease may come on within twelve hours after birth, or, on the other hand, may not occur for several days, but it very rarely makes its appearance after the lapse of a week. I once saw it attack a child fifteen hours after its birth, but in the other two cases it did not come on until the sixth day. Though it runs a rapid course, yet its onset is gradual; one of the first things that attracts the mother's notice being, in general, that the child does not take the breast when put to it, but utters a whimpering cry, and if the mouth be then examined it will be found more or less firmly fixed. Sometimes general convulsions come on suddenly, and usher in the other symptoms, but they more frequently follow than precede the trismus. When fully developed, these fits, which come on in paroxysms, are ushered in by a screech, or attended with some impairment of the respiration, and during their continuance the whole surface becomes livid. The hands are strongly clenched, the feet forcibly flexed on the ankles, and the toes bent, and remain so during the fit, while the trunk is curved backwards in a condition of opisthotonos, the mouth is generally drawn slightly open, and the lower jaw firmly fixed. When the fit subsides, the muscles do not become generally relaxed, but the child still lies with its hands clenched, thumbs drawn into the palm, the legs generally crossed, and the great toe separated widely from the others, while the head is thrown back and the opisthotonos continues, though in a diminished degree. The condition of the mouth is peculiar and characteristic. The jaws at first are slightly open, and the corners of the mouth drawn downwards and backwards, but as the disease advances the jaws become quite closed, the corners of the mouth even more drawn down, and the lips firmly compressed against the gums. The power of sucking is early lost, but for some time the child continues able to swallow; at length, however, it accomplishes

this with great difficulty, a convulsion sometimes following the attempt, while even that fluid which had apparently been swallowed is for the most part speedily regurgitated. The child dies either during some paroxysm of convulsions, or, seeming much exhausted, it sinks into a comatose condition, and so expires. There are few affections that run so fearfully rapid a course as this; its fatal termination almost always taking place within thirty-six, often within twenty-four hours from the appearance of the first symptoms.

The most frequent post-mortem appearance in these cases, and that which I found in the bodies of all the three children whom I observed, consists in the effusion of blood, either fluid or coagulated, into the cellular tissue surrounding the theca of the cord. Conjoined with this there is generally a congested state of the vessels of the spinal arachnoid, and sometimes an effusion of blood or serum into its cavity. The signs of congestion about the head are less constant, though much oftener present than absent, and in one instance I found not merely a highly congested state of the cerebral vessels, but also an effusion of blood in considerable quantity, between the skull and dura mater, and also a slighter effusion into the arachnoid cavity.

There is one circumstance, however, which makes me hesitate to refer the symptoms we have been describing to this apoplexy of the cord. When in Dublin, I examined the bodies of almost all the children who during a period of six months either were still-born or who died soon after their birth, in the lying-in hospital of that city. I found in almost all cases a considerable quantity of blood on cutting through the dorsal muscles, as I likewise did in the cases of trismus. The cellular tissue surrounding the dura mater of the cord contained a gelatinous semi-fluid matter, often mingled with blood, and a similar matter was often contained within the theca, while the vessels of the arachnoid were generally distended with blood. I found, moreover, that while the effusion of blood in coagula within the sac of the cerebral arachnoid was very rare, its effusion between the dura mater and the skull was by no means so unusual; and lastly, that it was not possible to draw any conclusion from the distension of the sinuses with blood, or from the presence of many bloody points on the surface of the divided brain. Since my return to England, I have had no opportunity of pursuing this inquiry so as to arrive at any definite conclusion with reference to the natural degree of vascularity of the spinal cord. Similar observations should be repeated with children of different ages, and whose bodies have after death been placed in a variety of positions, not always on the back, as in the cases which I examined.

* It is almost impossible in so young a subject to ascertain accurately the state of sensation, but there was no obvious indication of its impairment in this case.

There are few diseases respecting the cause of which opinions so various have prevailed as with regard to trismus. Bearing in mind the frequency of external injury as a cause of locked jaw in the adult, some writers have sought to find in every case the history of some blow or other injury to which it might plausibly be attributed, while others have conceived that it depended on awkward management of the navel-string, or injury of some kind or other inflicted on it. This last opinion has appeared to derive support from some cases in which the umbilical vein has presented the signs of phlebitis; but further observation has shewn these appearances to be anything but constant.

The remarkable frequency of the disease in hot climates, where the heat of the day is succeeded by intense cold at night, favours the opinion that interruption of the function of the skin by sudden alternations of temperature is a powerful cause of the disease. In an epidemic of this disease in the lying-in hospital at Stockholm, in 1834,* there seemed also to be a most marked connection between the periods of its greatest prevalence and the fluctuations of temperature. Nothing, however, can be more satisfactorily proved, than the tendency of a vitiated state of atmosphere to produce it. Sixty years ago, every sixth child born in the Dublin Lying-in Hospital died within a fortnight after birth, and trismus was the cause of the death of $\frac{1}{6}$ of these children. Dr. Joseph Clarke adopted means to secure the efficient ventilation of the hospital, and the mortality of the children fell at once to 1 in 19 $\frac{1}{2}$; and during Dr. Collins' mastership, from 1826 to 1833, was only 1 in 58 $\frac{1}{2}$, and but little more than the ninth part of that mortality depended on trismus†.

Though we may hope by wise hygienic measures to avert this disease, yet when once it has become developed, our prospects of cure are so slender that I may almost say the task is hopeless. I have not seen leeches employed, but, bearing in mind the post-mortem appearances, should certainly be disposed to apply them freely at the outset of the disease. I have seen the hot bath used with temporary relief; but though I have witnessed the employment of calomel and of antispasmodics, as assafoetida, and the administration of an enema of gr. liij. of tobacco infused for half an hour in $\mathfrak{z}$ vij. of water, yet I have never known any of these means followed by even a momentary pause in the symptoms; and the endeavour to excite the action of the skin is the only measure that in the cases which I witnessed seemed to be of the slightest service.

* Cederschjold, in Busch's Zeitschrift für Geburtak. x. 345.

† Collins's Treatise on Midwifery, p. 513.

ON
CHEMISTRY AND THE MICROSCOPE
IN RELATION TO
PRACTICAL MEDICINE.

BY GEORGE E. DAY, M.A. & L. M. Cantab.

Member of the Royal College of Physicians,
Lecturer on Animal Chemistry and Histology
at the Middlesex Hospital School, and Physi-
cian to the Western General Dispensary.

LECTURE IV.

ANIMAL COLOURING MATTER.—*Blood-pigments—Hæmatin.*—The same in arterial and venous blood—Its composition and chemical character—Proof that the red colour is not dependent on the iron—State in which iron exists in it—Combining proportions of hæmatin and globulin—Its origin, and the products of its decomposition—Its diagnosis—*Hæmaphæin*—*Bile-pigment*—*Biliphæin* or *cholepyrrhin*—Its composition and chemical characters—*Biliverdin*—*Bilifulein*—*Urine-pigment*—Identical with extractive matter—Its composition contrasted with that of the colouring matters of blood and bile—Uses of the pigments generally.

BILIN.—Two theories regarding the composition of the bile—*Petenkoffer's test for bile*—Quantitative determination of bile by means of it—*Origin of bilin.*

SUBSTANCES PECULIAR TO THE URINE.—*Urea*—Its composition and chemical characters—Its conversion into carbonate of ammonia—The application of this reaction to determine its amount—*Nitrate of urea*—*Ragsky's mode of detecting very small quantities*—*Oxalate of urea*—*Chloride of sodium and urea*—*Origin of urea*—*Views of Prout, Liebig, and Simon*—On the manner in which urea is eliminated from the system after extirpation of the kidneys—The folly of prescribing urea as a special diuretic.

TO-DAY, gentlemen, we proceed to consider the colouring matters occurring in the animal fluids—in the blood, the bile, and the urine.

Blood-pigments.—In the vertebrate animals the blood-corpuscles are the conveyers of the colouring matter which gives to the circulating fluid its characteristic red tint. This pigment (for which we shall adopt the name of *hæmatin*, after Berzelius, in preference to that of *hæmatorin*, as applied to the same substance by Lecanu) is retained in, or, more correctly speaking, chemically combined with the protein-compound forming the walls of the corpuscles, and is probably also held in solution in the fluid contained in them. A small quantity, however, occasionally passes through them, and is found in the serum.

It has been generally assumed that this pigment exists in two distinct chemical states in arterial and venous blood, having in the former an excess of oxygen, and in the latter an excess of carbon or carbonic acid. The reasons for such an assumption were—(1) that arterial and venous blood differ in colour; the former being of a bright, and the latter of a dark red tint; (2) that venous blood assumes an arterial colour when mixed with oxygen; and (3) that in the lungs, when venous blood becomes converted into arterial, oxygen is taken up and carbonic acid disengaged.

Recent investigations have, however, shewn that venous blood will assume an arterial tint under the influence of other

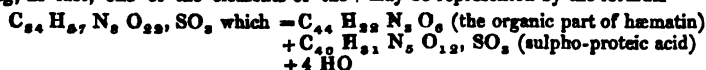
C . . .	66.49	65.91
H . . .	5.30	5.27
N . . .	10.54	
O . . .	11.01	
Fe . . .	6.66	6.58

From these analyses he calculated the formula* $C_{44}H_{22}N_2O_6Fe$, corresponding with the numbers—

Carbon . . .	65.84
Hydrogen . . .	5.37
Nitrogen . . .	10.40
Oxygen . . .	11.75
Iron . . .	6.64

For the best method of obtaining hæmatin in an isolated state fit for analysis, I must refer you to my Introduction to Simon's Animal Chemistry. When obtained by the process there described, it is of a blackish brown colour, is insoluble in water and ether, and only very slightly soluble in boiling alcohol. It dissolves, however, freely in alcohol acidulated with sulphuric, hydrochloric, nitric, or acetic acid, and communicates a tint to that menstruum, varying from a brown to a light-red, according to the strength of the solution. On the addition of water, it is gradually precipitated. Hæmatin dissolves freely in water or alcohol rendered alkaline by ammonia, potash, or soda; but the alkaline reaction is not in any degree neutralised by it. On the application of a strong heat, hæmatin swells up, gives off an animal odour, and burns with a clear flame, leaving a voluminous coal, which is ultimately reduced to a dark red ash.

When the hæmatin is properly prepared, the proportion of iron is constant, it being, in fact, one of the elements of the



Although this experiment affords conclusive evidence that the red colour is not dependent on the iron, yet this metal is very

substances besides oxygen. Solutions of perfectly neutral salts which do not disengage oxygen when mixed with venous blood—nitrate of potash, sulphate of soda, and many others—produce this effect. Hence it is by no means necessary to assume that the change of colour which the blood undergoes in passing through the lungs is dependent on the action of oxygen on its colouring matter: in fact, Mulder has proved by ultimate analysis that the elementary composition of hæmatin is the same, whether obtained from arterial or venous blood. He made five analyses: three from arterial ox-blood, one from venous ox-blood, and one from mixed sheep's-blood, yielding the following numbers:—

66.20	65.73	65.90
5.44	5.28	5.27
10.46	10.57	10.61
11.19	11.97	
6.75	6.45	

substance. The following is one of the modes by which the iron may be separated from the other elements:—

If hæmatin be diffused through water and exposed to the action of chlorine, the iron disappears, being dissolved in the hydrochloric acid produced, and six equivalents of chlorous acid ($6ClO_2$) are substituted for one of iron (Fe). The substance has now become white, and its composition is—



It must not, however, be assumed from this experiment that the red colour of the blood is dependent on the iron, for that constituent may be removed from the hæmatin without materially altering its tint, as may be shewn in the following manner:—

Let some dried blood be mixed with concentrated sulphuric acid, and, after standing for some days, let some water be added. Hydrogen gas is evolved by the action of the acid on the dried blood, and the whole of the iron is converted into sulphate, which remains dissolved in the water, and may be detected by the ordinary tests. If the blood, after this process, be carefully washed, a mixture of alcohol and sulphuric acid will extract from it red hæmatin in combination with sulpho-proteic acid,* but perfectly free from iron. Van Goudover has found that this compound, when prepared in different ways, has a constant composition, which may be represented by the formula—

* We retain Mulder's original formula for sulpho-proteic acid.

firmly combined with the four organic elements, and cannot be separated from them without entirely changing the nature of the hæmatin.

Well-prepared hæmatin may be submitted for several days to the action of dilute hydrochloric or sulphuric acid without the slightest diminution in the quantity of the iron. From hæmatin treated in this manner Mulder invariably obtained, after combustion, 9.49 per cent. of oxide of iron. The condition in which iron exists in hæmatin has been a subject of much dispute. The probability of its existence in a metallic state is, however, strongly supported by the evolution of hydrogen that occurs on digesting the clot with sulphuric acid, and then adding water; and Mulder suggests that the metal probably exists as an integral constituent of hæmatin, in just the same manner as iodine occurs in sponge, sulphur in cystin, or arsenic in the kakodyl series.

Numerous attempts have been made to ascertain the proportions in which hæmatin and globulin combine, but the results have been very discordant. According to Berzelius, the hæmato-globulin of human blood contains 100 parts of globulin and 5.8 of hæmatin; while Simon found the ratio to be 100 of globulin to 6.5 of hæmatin in the blood of a healthy young man, and 100 to 5.3 in that of a healthy young woman. In disease the variations are much greater. Simon found 8.5 and 3.3 to be the maximum and minimum of hæmatin corresponding to 100 of globulin.

Regarding the origin of hæmatin, it must clearly be generated in the organism, since it does not exist in the vegetable kingdom. It may possibly be one of the functions of the blood-corpuscles to secrete hæmatin from the blastema in which they lie, namely, the liquor sanguinis, for the purpose of retaining that fluid in a normal condition. In the development of the egg, it has been observed, that if oxygen be excluded there is a partial formation of blood-corpuscles, but no development of hæmatin. Its destination is also obscure. Mulder suggests that the products of its decomposition may possibly be traced to the bilifurvin of the bile. I am more inclined to the belief that its products are removed by the kidneys.

If we have an animal fluid given us for examination of whose origin we are ignorant, and it be of a blood-red, dark-brown, or blackish-red colour, we most commonly find that hæmatin is present. If blood-corpuscles can be detected by the microscope, we have certain proof of its presence. When a small quantity of blood is mixed with a serous or watery fluid, it frequently happens that the form of the corpuscles is no longer apparent. If, however, a solution of sugar, chloride of sodium, muriate of am-

monia, or iodine, be added, the characteristic shape of the blood-corpuscles will often be again rendered perceptible.

Hæmaphysin is a term applied by Simon to the brown colouring matter which is associated with hæmatin in the blood, and which communicates a brownish-yellow tint to the serum and to urine. It is apparently identical, or nearly so, with the yellow colouring matter described some years ago by Sanson.* Marchand regards it as nothing more than hæmatin modified by an alkali.

Bile-pigments.—The most important colouring matter of the bile is that to which it owes its characteristic brownish-yellow tint. It is called *cholepyrrhin* by Berzelius, and *biliphaïn* by Simon. We shall adopt the latter term. The only analyses of bile-pigment with which I am acquainted are those of Scherer, who collected a quantity from the urine of a patient suffering from jaundice. The fresh urine, after filtration, was treated with chloride of barium, on which a green precipitate at once fell. This precipitate was washed with water, and the colouring matter separated from it by two different methods, which I have recorded at length in one of my Reports on the Progress of Chemistry†, and to which I must refer any of you who may wish to repeat Scherer's experiment.

The colouring matter obtained by either process forms a very beautiful dark green powder, almost insoluble in water, readily soluble in alcohol‡ and spirit, and slightly so in pure ether. If a little caustic alkali or alkaline carbonate be added to the water, the solvent power is much increased, and the fluid acquires a colour varying from green to brown; it is also more soluble in water containing alkaline salts than in distilled water. When digested for some time with muriatic acid, the green colour is gradually converted into a blackish-brown; this also occurs when it is gently heated for some time with alkalis.

An ultimate analysis of the colouring matter yielded—

Carbon	68.19
Hydrogen	7.47
Nitrogen	7.07
Oxygen	17.26

Nitric acid has long been known as an excellent test for bile-pigment. On the addition of this reagent to a fluid containing it, a series of changes of colour are observed, usually pursuing the following order—blue, green, violet, red, and ultimately yellow, or

* Journal de Pharmacie, Août 1835, p. 420.

† Ranking's Half-Yearly Abstract, vol. i. p. 343.

‡ I use the term *spirit* to denote alcohol of specific gravity, 833, which contains about 85 per cent. of anhydrous alcohol; by *alcohol* I mean anhydrous alcohol of specific gravity, 927.

yellowish-brown, these tints corresponding with different stages of oxidation of the pigment. Dilute fuming nitric acid shews these changes the best. We may sometimes detect biliphsæin that would be otherwise inappreciable, by the addition of a little albumen to the fluid before adding the nitric acid; the albumen being then precipitated in white flocks, upon which a slight tinge of green may be distinctly perceived.

On the addition of an acid to the solution of biliphsæin, decomposition takes place, and there is a precipitation of green flocculi to which Berzelius has given the name *biliverdin*. After the separation of the biliphsæin by conversion into biliverdin, another colouring matter remains, to which Berzelius has given the name of *bilifuscin*. But whether it is an actual constituent of bile, or whether it is a mere product of metamorphosis, is unknown.

Urine-pigment.—The principal colouring matter of the urine appears, from the recent investigations of Scherer, to be the substance previously termed extractive matter. It is precipitated by acids, neutral and basic acetate of lead, and various other chemical reagents; but the precipitate in different urines has a different composition.

We may conclude, with great probability, that both bile- and urine-pigment are formed by an oxidizing process from the hæmatin of the blood, while the other substances occurring in those fluids are probably formed from the protein-compounds of the blood and organic tissues. This view is rendered more obvious by placing the composition of the three substances in apposition.

	Hæmatin.	Bile-pigment.	Urine-pigment.
Carbon	70.49	68.19	58.43
Hydrogen	5.67	7.47	5.16
Nitrogen	11.16	7.07	8.83
Oxygen	12.59	17.26	27.58

Since the urine-pigment does not always present the same composition, it is obvious that it, and the substance from which it is formed by the vital process, are undergoing a continuous metamorphosis, which appears to be one of oxidation or putrefaction.

There are other colouring matters described as occurring in the urine—uroerythrin, uroxanthin, urochodin, uroglauclin, &c.—which we shall notice in our lectures on the urinary secretion; too little is as yet known of their chemical constitution to entitle them to a place amongst the established animal pigments.

The uses of the pigments occurring in the animal fluids are not clearly understood; I am inclined to believe that one of their principal functions is to aid in the depuration of the blood.

Following the arrangement adopted in the

Introduction to Simon's Animal Chemistry, we now arrive at the subject of *bilin*, the substance regarded by Berzelius as the principal and most important constituent of the bile. I shall explain to you, in our lecture on the bile, the best mode of isolating this substance, and shall then also describe the numerous chemical products which it yields on decomposition. At present, I shall merely give you a test by which you may be enabled to ascertain whether bile is present in any fluid you may be examining. You must bear in mind that nitric acid is no test for bile; *that* merely detects the presence of its colouring matter; *this*, the test I am about to describe, exercises no influence on the pigment, but acts solely on the essential constituent of the bile—the bilin. We often meet with the pigment, but comparatively rarely with the bilin, in our analyses of animal fluids. There is also another point to which I must call your attention. Chemists are much divided in their opinions regarding the actual constitution of the bile; Berzelius and Mulder regard the neutral body *bilin* to be, as I have assumed, the essential constituent, while Demarey, Liebig, and others, maintain that there is no such substance as bilin, and regard the bile as consisting essentially of an organic acid—*choleic* or *bilic acid*—combined with soda. I shall be able to shew, when speaking of the bile, how these apparent discrepancies have arisen. I only mention the two views here, with the object of removing any ambiguity that might arise in your minds while reading the descriptions that have been given by different chemists of this secretion. So far as the test I am going to describe to you is concerned, it matters not which of the above views we adopt.

A small quantity of the liquid, or of the aqueous solution of the solid, suspected to contain bilin, is poured into a test-tube, and about two-thirds of its volume of sulphuric acid added by drops. The heat of the mixture must be kept below 144° F. to prevent the decomposition of the bilin. From two to five drops of a solution of cane-sugar (one part of sugar to four or five of water) are now added, and the mixture shaken. If bilin be present, a beautiful violet-red colour will appear, intense in proportion to the amount that is present.

In applying this test there are several precautions to be attended to.

1. Recollect what I have told you regarding the temperature.
2. Add the syrup carefully; if too much be added, it will form a dark brown mixture with the sulphuric acid, that may conceal the violet-red tint; or possibly sulphurous acid might be developed, which would destroy the tint.
3. For the last-named reason, the sul-

phuric acid must be free from sulphurous acid.

4. If the fluid contain albumen, it is advisable to coagulate and remove it, since when heated with sugar and sulphuric acid, it develops a somewhat similar tint: a small quantity of albumen does not interfere with the action of the test.

5. A great excess of chlorides is stated to convert the colour to a brownish red; the amount occurring in the animal fluids is, however, usually much too small to produce this reaction.

Pettenkofer remarks, that if the bile be in very small quantity, the suspected fluid should be carefully concentrated on the water-bath, and extracted with alcohol, which is to be evaporated to a small volume, and the test applied to the cold solution. Sometimes an interval of several minutes elapses before the colour begins to appear, especially when the sulphuric acid is added very slowly. In this reaction, grape-sugar, or starch, may be substituted for cane-sugar.

Concentrated muriatic acid, treated with bile and sugar, likewise produces a red colour, but this much lighter and less beautiful than with sulphuric acid.

By this test Pettenkofer detected bilin in the urine of a patient with pneumonia; he found that healthy feces did not yield the slightest reaction, but in the stools produced by calomel, and in all cases of diarrhoea, bilin was almost invariably present.

Dr. Kemp has shewn, that on adding a considerable quantity of water to a fluid exhibiting this reaction, the colouring matter separates in the form of a bulky chocolate-coloured precipitate, which may be separated by straining through linen; by the amount of this precipitate we may measure the quantity of bilin present, better than by merely judging from the tint.

Dr. Van den Broek* has recently asserted that the sugar takes no part in this reaction, and that a precisely similar colour is evolved on the mere addition of the sulphuric acid. On making parallel experiments, with and without sugar, I find that the difference of colour is sufficiently obvious, unless the fluid be actual bile, or a very concentrated solution of bilin. In the absence of sugar the violet tint is absent, and the colour resembles that of meconate or sulphocyanide of iron.

It is undoubtedly to the protein-compounds that bilin owes its origin, but whether it is formed directly or indirectly from them is still unknown. The frequent occurrence of

albumen in the bile in cases where the secreting organs have been at fault, indicates their close affinity.

We now proceed to a new class of substances—those occurring in the urine; and we shall commence with urea, the principal constituent of the solid residue of healthy human urine. It is found in considerable quantity in the blood after extirpation of the kidneys; also in certain pathological conditions, in which the renal functions are not properly discharged—as in cholera, ischuria, and Bright's disease. In cases of this nature it has also been found in milk, bile, sweat, saliva, and various morbid effusions. That it does exist in healthy blood as a constant although very minute constituent, has also been thoroughly established by Marchand and Simon.

Many of the chemical details regarding urea are of a highly interesting nature: these, however, we must omit, except in so far as they bear on physiological points, or elucidate the processes of analysis employed in the investigation of the animal fluids. Urea will always bear a conspicuous place in the history of organic chemistry, as being the first organic product ever produced artificially. For this discovery we are indebted to Wöhler; Liebig has, however, since published a much more simple mode of procuring it (identical, however, in principle) from ferrocyanide of potassium, peroxide of manganese, and sulphate of ammonia: every pound of ferrocyanide of potassium yielding a third of a pound of pure urea. The mode of proceeding is fully given in my Introduction to Simon, and in most recent works on Chemistry. The best methods of obtaining it from the urine will be given when we arrive at the consideration of that secretion. We shall here only describe its leading characteristics, and the best mode of procedure for the detection of it.

Urea has been analysed by several chemists, who agree in assigning to it the formula $C_2H_4N_2O_2$, corresponding with the numbers—

C	.	.	20.198
H	.	.	6.595
N	.	.	46.782
O	.	.	26.425

It contains a larger proportion of nitrogen than any other organic compound. Urea, when pure and in crystals, is white and transparent; deposited from a concentrated hot solution, it occurs in the form of fine silky needles, but by very slow or spontaneous evaporation it separates into four-sided prisms, resembling nitre, not only in form, but in taste.

* *Hollandische Beiträge zu den Anatomischen und Physiologischen Wissenschaften*; herausgegeben, von Dr. J. Van Deen, Dr. F. C. Donders, und Dr. Jac. Moleschott, vol. i. pp. 100 & 175.

FIG. 1.



FIG. 2.

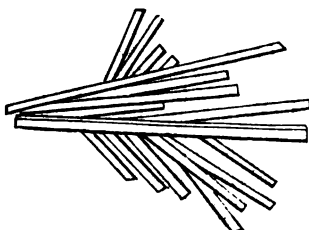
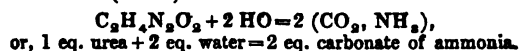


FIG. 1. A crystal of urea (Schmidt).

FIG. 2. Crystals of urea (Simen).



Advantage has been taken of this reaction to determine urea quantitatively; and we shall in our lectures on the analysis of the urine enter fully into the mode of proceeding. The following is Ragaky's description of the experiments he made on the subject. He took one part of urea in solution, and added to it three or four parts of concentrated sulphuric acid, placing the mixture in a flask, and exposing it to the heat of a sand-bath. He found that the heat must not exceed 572° , as ammonia then began to escape. The decomposition of urea commences at 383° , and the evolution of carbonic acid gas is very lively at 392° . In this process the sulphuric acid decomposes the carbonate of ammonia, sulphate of ammonia being formed, and carbonic acid escaping. The ammonia is then determined

It is soluble in its own weight of cold, and in a less quantity of hot water; in 4.5 parts of cold, and in 2 parts of boiling alcohol: it is slightly soluble in ether, about 1 part in 60, at an ordinary temperature. It deliquesces in a moist atmosphere, but its chemical characters remain unaffected. In dry air it is perfectly permanent. A concentrated watery solution may be boiled and preserved for a long time without any change, but if albumen, mucus, or especially any substance in the act of undergoing decomposition, be present, it is speedily converted into carbonate of ammonia. The possibility of this transformation is obvious from the formula—

in the form of ammonio-chloride. As an example of the accuracy of this method, I may mention that from 4.022 grains of urea he obtained a result indicating 4.001 grains, the error barely exceeding the 200th of the quantity employed.

The only compounds of urea that are of any practical importance analytically are the nitrate and oxalate, and the compound it forms with chloride of sodium.

Nitrate of urea is obtained by the direct addition of nitric acid in excess to a concentrated solution of urea. Its formula is $\text{C}_2\text{H}_4\text{N}_2\text{O}_2, \text{HO}, \text{NO}_3$. 100 parts of the nitrate correspond to 48.945 of urea.

For an explanation of the forms in which nitrate of urea crystallises, I must refer you to the diagrams (3, 4, and 5).

FIG. 3.

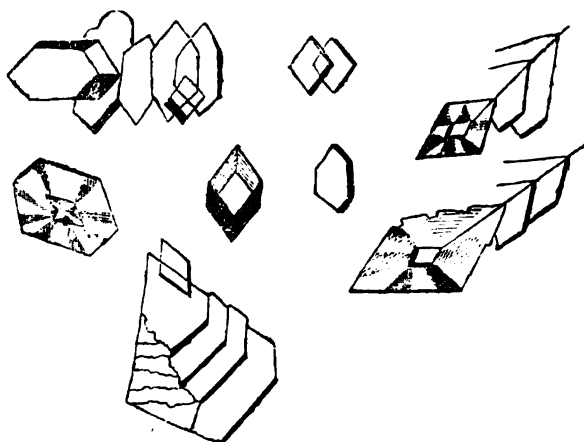


FIG. 3.—Crystals of nitrate of urea (Schmidt.) The octahedra, of which two may be seen on the right of the figure, are formed at the commencement of crystallisation, and

merge so rapidly into prisms, that unless specially watched for, their detection is not easy.

FIG. 4.

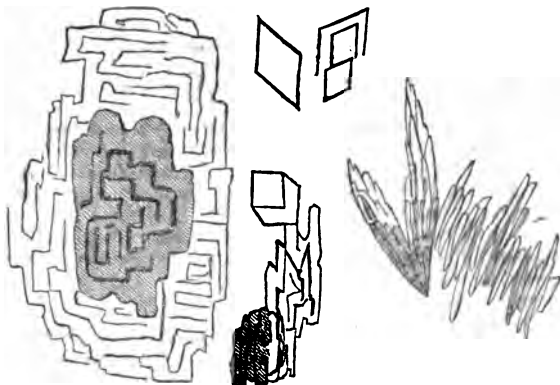


FIG. 4. The appearance presented on the addition of nitric acid to the alcohol-extract of urine (Simon).

FIG. 5.

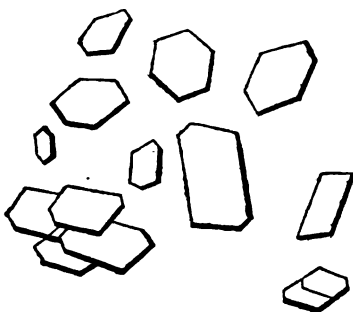


FIG. 5. Nitrate of urea crystallised from a solution of urea in an excess of dilute nitric acid.

The nitrates of soda or potash resulting from the decomposition of chlorides by the nitric acid may be mistaken for the nitrate of urea. Nitrate of soda may at once be known by its greater solubility in water, but with potash the distinction is not so easy. Schmidt recommends that in cases where there is only a little urea, and a comparatively large quantity of chloride of potassium present, the potash should be removed, as bitartrate of potash, before adding the nitric acid.

It dissolves in eight parts of cold water, and more freely in hot water. It is sparingly soluble in nitric acid.

Ragatzky has recently directed attention to a point worthy of notice in relation to the detection of urea by the microscope. He finds that the most clearly-defined crystals of the nitrate are obtained from a solution in moderately concentrated pure nitric acid. For this purpose the urea is first to be extracted from the substance under exami-

nation by means of alcohol, and subsequent concentration on the water-bath; a small portion of it is then dissolved in about three or four drops of tepid nitric acid upon a watch-glass, and subsequently allowed to cool. The crystals of nitrate of urea formed in this process are extremely well defined, and may be readily distinguished with a microscope of a linear magnifying power of 200. Care must be taken to use the nitric acid in sufficient quantity to leave a mother-liquid upon the separation of the crystals, since without this they will not appear nearly so distinctly. The crystals of nitrate of urea form very thin rhombic plates or laminæ, in which one or both the acute angles are frequently truncated. Some of these plates swim isolated on the mother liquid, whilst others are united in layers, assuming an imbricated arrangement. (The rhombic plates are seen in fig. 5, and the imbricated arrangement in fig. 3.) A characteristic property of these crystals is that they disappear with effervescence on the addition of fuming nitric acid.

Oxalate of urea is obtained by the mixture of concentrated hot solutions of urea and oxalic acid. Its formula is



It crystallises in the form represented in Fig. 6. At a temperature of 61° water dissolves only 4.37, and alcohol 1.6 per cent.

* Marchand has been recently engaged in throwing the salts of urea into a state of confusion. He asserted that there were at least three nitrates; this view he has since retracted. He still, however, differs from other chemists regarding the composition of oxalate of urea, which he maintains, and perhaps correctly, to be represented by the formula



On gently heating it to 230° F. two equivalents of water are expelled, and the mono-hydrated acid remains combined with the urea, as represented in the text.

FIG. 6.

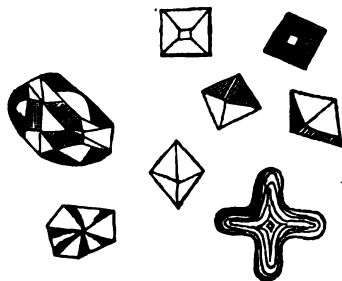
*Oxalate of urea (Simon.)*

of oxalate of urea. Oxalic acid displaces nitric acid from its combination with urea. 100 parts of the oxalate correspond to 62.564 of urea.

As a general rule, nitric is far preferable to oxalic acid in testing for urea. Schmidt regards oxalate of urea as a very frequent, if not an invariable constituent of healthy urine.

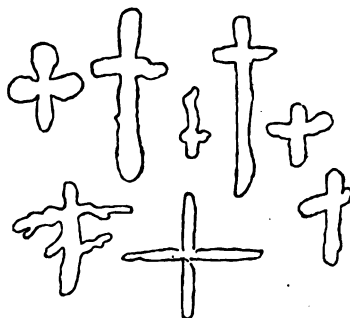
Chloride of sodium and urea.—It was shewn many years ago by Beudant* that urea, when present even in very small quantity, possesses the property of modifying the ordinary crystalline form of chloride of sodium; in its pure state it crystallises in cubes, but when urea is present, in octahedra and tetrahedra, and their combinations. This property has been made use of as a test for small quantities of urea. It is not to be depended upon; neither, in my opinion, should we trust alone to the crosslets and daggers produced on the rapid evaporation of a mixture of urea and salt.

FIG. 7.

*Chloride of sodium crystallising from a solution of urea.*

* *Annales de Chimie et de Physique*, vol. viii. page 5.

FIG. 8.

*Forms produced on the rapid evaporation of the same.*

It now only remains for me to say a few words on the origin of urea, and to notice some experiments that have been recently instituted regarding the mode by which, for a time, urea is eliminated from the system after the extirpation of the kidneys.

Our distinguished countryman, Prout, supposes urea to be derived from, or to represent the gelatinous, and uric acid the albuminous forms of the albuminous principle.

Liebig, on the other hand, considers that uric acid is the immediate product of the metamorphosis of all nitrogenous tissues, and urea is the secondary product arising from the action of oxygen and water on the uric acid. In his recent work on "The Chemistry of Food" (see Lecture iii. p. 450), he shows, however, that urea may be readily obtained from creatine. Whether this discovery will modify his previous views, as to the changes actually occurring within the organism, I do not know.

Simon believes that urea, and also uric acid and bilin, are the products of the metamorphosis of the blood-corpuscles. "It seems opposed to all reason," he observes, "to imagine that in animals as different in structure as they are opposite in their habits of life, and under every possible variation of circumstances, these fixed and definite compounds should be products of the metamorphosis of the plasma during the nutrition of every form of tissue. It is, however, easy to conceive that the corpuscles, which, although different in their form, are similar if not identical in their chemical constitution, in all these animals, should, under similar conditions, yield similar products as the result of their metamorphoses, and that these products should take the forms of urea, uric acid, and bilin. If the urea, uric acid, and bilin, were formed in accordance with the other hypothesis, their production would be increased, di-

minished, or stopped according as nutrition was proceeding favourably, was deficient, or was entirely checked, as happens in certain disorders. But it is well known that the production of these compounds is by no means dependent on such circumstances. The secretion of urea, uric acid, and bilin, proceeds, both in man and animals, when the tissues are gradually wasting from disease, and when their nutrition is utterly suspended: they are separated long after the body has ceased to take any food whatever, in fact as long as respiration and even life itself remain; the only necessary condition being the healthy state of the secreting organs." Plausible in some respects as this view is, there are several objections to which it is open. My own opinion is, that we are not warranted in ascribing the origin of urea to any one particular part or tissue of the body; this much, however, we know, that it is not formed in the kidneys, but merely removed by those organs from the blood.

I shall conclude the subject of urea by a brief notice of a recent memoir by Bernard and Barreswil,* on the means by which it is eliminated from the system after extirpation of the kidneys. The following are the most important conclusions deduced from a series of experiments on the lower animals.

(1.) That after the removal of the kidneys, the intestinal secretions, especially the gastric secretion, considerably augment in quantity and change their type; that is to say, in place of being intermittent, and only forming during the act of digestion, they are produced in the same manner as the urine, both fasting and during digestion.

(2.) That, independently of the augmentation in the quantity of the gastric secretions, there occurs in them, after the removal of the kidneys, a new chemical element; to wit, a salt of ammonia.

(3.) That this production of an ammoniacal salt in the gastric juice becomes apparent a few hours after nephrotomy, and that notwithstanding this modification the gastric juice remains acid, and apparently retains its digestive properties.

(4.) And, finally, that this elimination of a considerable amount of ammoniacal fluid by the intestine continues as long as the animal remains lively (*vivace*); but as soon as the animal began to become weak and languid the intestinal secretions diminished, and when they ceased the urea began to accumulate in the blood.

Since the urea did not begin to accumulate in the blood until the ammoniacal salts ceased to be eliminated by the intestines, it may be fairly concluded that the intestinal secretions, as long as they lasted, supplied

the place of the urinary secretion by their abundance, and by the nature of the new products they contained.

These experiments are not devoid of value in tending to elucidate the connection between gastric derangement and renal disease.

I should add, that these gentlemen believe that the urea exists *as urea* in the blood, and does not become converted into an ammoniacal salt until the instant it arrives in the intestinal canal. This view is strongly confirmed by certain experiments in which urea and its solution (urine) were introduced into the intestinal canal of living animals: on killing these animals a few seconds afterwards, urea could no longer be found; it was replaced by ammoniacal salts. These experiments sufficiently explain why urea, when given medicinally, has not been found in increased quantity in the urine; it acts merely as an ammoniacal salt.

MEDICAL STUDENTS SHOULD AVOID POLITICS.

AND here let me add a word of caution. In this country, where every man is presumed to belong to one of the two great political parties of the day, the physician is expected to enlist in the strife, and become an active partisan in the field. But, in my judgment, the medical man should not be known as a politician; nor should his political preferences and dislikes be thrust forward, and frequently proclaimed to the world. He is emphatically a public man, and should be a man of the people; his aim should be to recommend himself to all parties; to make himself useful to all, and not by active partizanship set one-half of the community against him. He should neither be known as a Whig nor a Democrat, but a philanthropist and patriot in the broadest sense of the terms—devoted to the common weal and the good of his patients. There is, indeed, something in the noisy pursuits of politics, which seems to me utterly incompatible with the character of a man of science, and wholly ruinous to the professional advancement, and even mental improvement, of the medical practitioner. Politics, in our country, is the greatest maelstrom which swallows up time and character, morals, reputation, and money; and which makes no return whatever, but disappointment and vexation of spirit. It excites animosities; creates bitterness of feeling; separates friends and neighbours; introduces discord in families; wastes their substance; and confers no advantage. Shun politics, gentlemen, as you would the poisonous upas; and whoever tempts you to enter into the political field, set him down as your worst enemy."—*Dr. C. A. Lee's Address, British American Journal.*

* Archives Générales de Médecine, Avril 1847.

ON
MORBID SYMPATHIES;

OR THOSE ASSOCIATED STATES OF DIS-
ORDER WHICH MOST FREQUENTLY
PRESENT THEMSELVES TO
THE PHYSICIAN.

*Being the Croonian Lectures delivered at
the Royal College of Physicians in
March and April, 1846.*

BY JAMES COPLAND, M.D. F.R.S. &c.

ARRANGEMENT OF MORBID SYMPATHIES
OR ASSOCIATED DISORDERS.

- I. Definition of sympathies.
- ii. Preliminary anatomical and physio-
logical observations.
 - A. The great extent and importance of
the ganglial or the organic nervous system.
 - B. The connections subsisting between
the organic and cerebro-spinal nervous
systems.

I. INQUIRY INTO THE MEDIA BY WHICH
SYMPATHETIC AND SYMPTOMATIC PHENOMENA
ARE INVOLVED, AND MORBID
CONDITIONS ARE ASSOCIATED.

- i. *Direct or immediate sympathies.*
 - A. Direct communications by means of
ganglial nerves.
 - B. Influence of ganglia on different organs
or parts.
 - C. By direct communications by means of
the cerebro-spinal nerves of sense and
motion.
 - D. By continuity of surface or tissue.
 - E. By contiguity of organs and struc-
ture.
- ii. *Indirect or mediate sympathies.*
 - A. By vascular communications.
 - B. By states of the circulating fluids.
 - a. The chyle, and other absorbed
fluids.
 - b. The blood.
 - C. Owing to the conditions of the secre-
tions and excretions—
 - a. By the various secretions.
 - b. By the excretions.
- iii. *Reflected sympathies.*
 - A. Reflected from nervous ganglia, often
attended by spasm and altered sensibility
of involuntary parts.
 - B. Reflected through the media of the
ganglionated roots of the spinal nerves, and
affecting the movements of voluntary parts.
 - C. Reflected through the medium of the
spinal cord, and inducing morbid sensa-
tions or motions, or both.
 - D. Reflected through either the medulla
oblongata or the brain, or both, and causing
various disorders of sensibility, of percep-
tion, and voluntary action, &c.

II. CIRCUMSTANCES INFLUENCING THE
CHARACTER, NUMBER, AND INTENSITY,
OF SYMPATHETIC PHENOMENA.

- i. *Race and temperament.*
- ii. *Habit of body.*
- iii. *Sex.*
- iv. *Age.*
- v. *Physical power.*
- vi. *Occupations, &c.*

III. CLASSIFICATION OF MORBID SYM-
PATHIES, OR OF SYMPTOMATIC OR
ASSOCIATED DISORDERS.

- i. ASSOCIATED AFFECTIONS OF DIGES-
TION AND ASSIMILATION.
 - A. *Disordered states of digestion and
assimilation associated with each other.*
 - a. Associated disorders of the stomach
and liver.
 - b. Associated disorders of the liver
with the intestines.
 - B. *Morbid sympathies between the diges-
tive organs and the secreting and excreting
functions.*
 - a. Between the functions of digestion
and the urinary functions.
 - b. Between the digestive functions and
the skin.
 - c. Between the functions of digestion
and fecation.
 - C. *Sympathies between the digestive and
the circulating and respiratory functions.*
 - D. *The sympathetic and symptomatic
relations between the digestive organs, the
brain, and the organs of sense.*
 - E. *Sympathies between the functions of
digestion and of locomotion.*
 - F. *Associated disorders of the digestive
and the sexual organs.*
- ii. SYMPATHETIC AND SYMPTOMATIC PHENOMENA
CONNECTED WITH THE CIRCULATING AND RESPIRATORY FUNCTIONS.
 - A. *Mutual influences of these functions.*
 - a. From nervous connections.
 - b. From the nature of the functions
themselves.
 - c. From their actions on, and the re-
actions of, the blood.
 - d. From physical agents acting on the
blood and on the respiratory and
circulating organs.
 - e. From mechanical and other impedi-
ments to the circulating apparatus.
 - f. Influences of these functions, and
their symptomatic relations in
acute diseases.
 - g. Symptomatic relations of these
functions in chronic diseases.
 - B. *Morbid sympathies of the circulatory
and respiratory functions with the digestive
functions.*
 - C. *Sympathy between the vascular and
respiratory functions and the brain and
organs of sense.*

D. *Associated morbid states of circulation, secretion, and excretion.*

E. *Association of disordered excreting function, with disorder of the vascular, nervous, and muscular systems.*

III. ASSOCIATED STATES OF DISORDERED SENSATION AND SENSIBILITY.

A. *Sympathetic and symptomatic states of the several senses.*

a. *With the functions of digestion and excretion.*

b. *With states of the brain and spinal cord.*

B. *Sympathetic relations of sensibility.*

a. *With the organic functions.*

b. *With states of the cerebro-spinal centres.*

c. *With the reproductive organs.*

IV. ASSOCIATED AFFECTIONS OF VOLUNTARY MOTION.

A. *Sympathy between the functions of sense and locomotion.*

B. *Associations of mental emotion and locomotion.*

a. *Arising from the exciting emotions.*

b. *From depressing emotions.*

C. *Sympathies between organic and animal or voluntary motions.*

a. *Organic or involuntary motions extending to voluntary muscles or organs, and rendering the actions of these involuntary.*

b. *Voluntary motions affecting the organic or involuntary actions.*

c. *Associations of the organic and voluntary motions in the functions of reproduction.*

V. SYMPATHIES OF THE ORGANS OF REPRODUCTION.

A. *Sympathies between these and the digestive and assimilative functions.*

B. *Between the sexual organs and the cerebro-spinal functions.*

a. *Between these organs and the brain.*

b. *Between these and the spinal cord and voluntary organs.*

C. *Between these organs and the functions of sense and general sensibility.*

VI. CONCLUDING REMARKS.

As to the importance of observing closely sympathetic and symptomatic phenomena, and of tracing their origins and relations, with reference not merely to diagnosis, but also to prognosis and treatment.

THE subject of the following lectures* will be—"Morbid sympathies, or those

associated states of disorder which most frequently present themselves in practice." A due recognition of these, of the media of their connection, of the modes of their supervention, and of their extent, is of the greatest importance to the physician in enabling him to form a correct diagnosis and prognosis in most of the diseases which come before him, and to arrive at rational indications of cure.

Morbid sympathies may be defined to be associated states of disordered function, or of diseased action; the disorder or disease of one system, or organ, or part affecting other systems, organs, or parts, according to their organic connections, their functional relations, and their several tendencies, or acquired or constitutional predispositions; the consecutive sympathetic disturbance often being more prominently manifested than the original or efficient morbid condition, and thereby frequently concealing or masking this condition.

It is necessary to a due consideration of this subject, that, before I proceed to notice the more remarkable morbid associations occasionally presenting themselves in practice, we should take an *anatomico-physiological view of the media or channels by which one organ or part sympathises with, or becomes affected by, the conditions of another organ or part.*

The modes of explanation adopted by previous writers are various and unsatisfactory, and have been generally based upon the prevalent doctrines of the day—consequently the recognition of sympathetic, symptomatic, or associated morbid states, has been imperfect, the classification of them arbitrary or conventional, and the chains of connection existing between them improperly or erroneously traced.

Dismissing, therefore, all reference

and deaths of very near relations, and other circumstances, prevented me for several months from attending to the matter. They were at last returned to the printer, where they have been from March until now. I should not now have published them, but certain views contained in them engaged much of my attention, and not a little of my time, many years ago. And when they first appeared, in 1822 and 1824, they were considered by many as heterodox and visionary. They have, however, received support from the more recent researches of several eminent inquirers; and they alone of existing doctrines are capable of accounting for the *sympathies or associations of morbid function and action*, succinctly and imperfectly considered in these lectures.—J. C.

* These lectures were delivered in March and April 1846, from short notes, and taken down for the LONDON MEDICAL GAZETTE, by a shorthand writer. They were sent to me for correction, but pressing engagements, the illnesses

to the few writers who have considered the subject, I shall view it conformably with the inferences at which I have arrived, from researches which have engaged my attention on various occasions during the last thirty years. But I can only imperfectly accomplish my intention in the course of three lectures, and must merely touch on certain points, which, to do them justice, would require a much more extensive elucidation.

There are certain circumstances in the *anatomy of the organic nervous system*, which, when kept in recollection, serve remarkably to explain many phenomena hitherto imperfectly accounted for. Much of the difficulty and misapprehension in tracing the connexion of the sympathetic or associated morbid states have arisen from the usual modes of viewing large nervous masses, as giving origin to the nerves, or as being themselves a congeries of ganglia of a peculiar constitution.

It would be much more conformable with a comprehensive view of the nervous system through the various grades of animal organisation, and with the development of this system in the more perfect animals, if the nerves, and especially the sensory and those of organic life, or ganglial nerves, were viewed as originating in the several tissues or structures themselves, more particularly in the cutaneous and mucous membranes in the serous and fibrous tissues, &c. This idea, entertained and published by me many years ago, subsequent observations and reflections have tended to confirm.

Another important circumstance is one which I have also insisted upon for many years, which was formerly disbelieved, but is now fully confirmed by recent researches—namely, that all secreting organs, surfaces, and parts, are supplied with organic or ganglial nerves. The modes in which the viscera, both abdominal and thoracic, are supplied, are well known—namely, *first*, by fibres proceeding from numerous ganglia and plexuses, or, according to the view just stated, by fibrils originating in the organic or ganglial corpuscles, which, by microscopic aid, have been detected not only in the softer ganglia and nerves themselves, but also through

the muscular tissue, the skin, the serous and the mucous surfaces; or, in other words, from fibrils originating in organic or ganglial corpuscles, and proceeding centripetally to form plexuses or ganglia in the various abdominal, thoracic, and pelvic viscera. *Secondly*, by the organic or ganglial fibrils interlacing and surrounding the coats of arteries. As far back as the days of Winslow, the soft or ganglial nerves were traced in the large arteries, and he represented them as forming a net-work around these arteries. When in Germany and other parts of the Continent, in 1816, 1817, and 1819, this subject engaged my attention; and I was enabled, by the microscopes then in use, which were of weak power, to trace these nerves when the parts had been macerated for a short time in spirits of turpentine or spirits of wine, or diluted acetic acid, to trace the ganglial nerves as far down as the lower third of the femoral artery; and my more recent researches have shewn that numerous fibres proceed from the sympathetic ganglia to the gangliated roots of the spinal nerves, and thence, on the one hand, to the cord itself; and, on the other, are ramified, along with the spinal nerves, to the extremities. When they reach the extremities, especially near the surface, and in the vicinity of the several joints, and even as low as the ankles and wrists, they become intimately associated with sensory nerves, forming, with them, small or minute ganglia, and supplying with minute fibrils the synovial surfaces.

I have stated that these nerves are, near the cutaneous surface, intimately associated with the sensitive nerves, and that they form with them, near the joints, minute ganglia. The obvious intentions of this organisation are—1st, that the sensory function and the ganglial functions should be associated; and 2d, that the vessels furnishing the secretion to the synovial surface shall be reinforced by organic nervous energy, for the promotion of synovial secretion. The communications of the ganglial nerves with the sensory nerves and spinal cord,—the numerous branches proceeding from the splanchnic ganglia to the sympathetics, and thence to the ganglionated roots of the spinal cord, and to the cord itself,—explain many of the phenomena re-

marked in the course of diseases of the abdominal viscera, on the one hand, and of diseases of the spine, spinal cord, and joints, on the other. When diseases of the joint go on so as to produce disorganisation of the parts, we commonly find that the digestive organs sympathise more or less, so that loss of appetite, and even vomiting, not unfrequently supervene.

I have elsewhere contended that the nerves supplying the synovial and mucous surfaces and integuments should be viewed as originating in the nervous corpuscles distributed to these parts,—or, in other words, that delicate fibrils arise in, and are connected with, these corpuscles, coalesce in the extremities with the sensitive fibres, form minute ganglia with these latter, and run thence, or rather converge, towards the spino-cerebral axis. Thus, whilst the *splanchnic and sensitive nerves* may be viewed as arising in, or commencing from, the nervous corpuscles already noticed as existing in the several surfaces, viscera, and organs, and as interlacing or communicating freely with each other, and with nerves of motion, as well as supplying the circulating systems, the *motory nerves* proceed in an opposite direction. The *former* converge towards the centre, communicating with the encephalon and nerves of sense; the *latter* diverge from the spinal centre to the periphery, also communicating with the brain, from which proceed the impulses of volition by which they are influenced. The *one* class is acted upon by mental impressions or volition; the *other*, by physical causes or agents.

The nerves may thus be divided into *three classes*: namely, 1st, the splanchnic or visceral, or those of digestion, assimilation, circulation, and secretion; 2dly, those of general and special sensation; and 3dly, those of volition, or muscular action or motion.

But it is important to bear in mind the character of the communication between these orders of nerves, inasmuch as such communications give rise to numerous states of healthy or morbid action, and occasion, mutually, various affections of the large or nervous centres. The connections between the organic nerves and the roots of the spinal nerves, and the nerves of sensation, have not been investigated till recently; and even now not so fully as

is required. This, however, may be remarked generally, that the organic or ganglial nerves are more or less connected with all the nerves of sensation; and where the connection is formed, or where the nerves approach each other, you generally find minute ganglia existing.

It has been a subject of discussion, viewing the brain as the secreting organ, as it were, of the manifestations of the mind, how the brain itself is supplied with organic or ganglial nerves. We know that the vessels of the brain, the carotids and other arteries, are all surrounded by ganglial or soft nerves; still this is an insufficient supply of these nerves, if we consider the analogy existing between this organ and the other organs of the body—if we view the brain to be like other viscera; inasmuch as we find in other viscera, that, beside the ganglial nerves thus distributed to the blood-vessels, there are also special ganglia, which are intended for the further supply of nervous energy to them. Take, for instance, the liver: there are, besides the organic or soft nerves supplying the blood-vessels, several ganglia and plexuses supplying the structure of the viscus itself. Take the kidneys: there are also specific ganglia devoted to the maintenance of a certain and constant amount of nervous energy, probably modified in kind, or suited to the functions of these organs. It is not, however, so manifest that the brain enjoys a similar supply of ganglia and ganglial nerves, or that the supply of these nerves furnished through the medium of the blood-vessels is at all sufficient for the several functions or manifestations of the brain, viewing these functions as in some way connected with a supply of ganglia and of ganglial ramifications, as observed in respect of secreting viscera and organs. Hitherto the sufficiency of the supply of ganglial nerves sent to the brain with the blood-vessels has not been demonstrated, and hardly admitted; and special sources of such supply as exist in connection with other viscera, have not been satisfactorily shown, granting that the organic nerves supplying the blood-vessels of the brain are insufficient for the discharge of the functions of this organ.

It has been considered, and most probably with truth—indeed I have on

several occasions contended—that the pituitary and the pineal bodies are in fact organic nervous ganglia, inasmuch as there are communicating branches or fibrils running between the other ganglia, at the neck and about the base of the skull and these bodies. But, in opposition to this view, it has been argued that they are different from the other ganglia in the body. However, as all the ganglia may be considered to have a minute special conformation or organization, according to the functions to be performed by the organ which they supply, and as the functions of the brain are so very different from those of other parts of the body, so may the ganglia distributing their prolongations and fibres to this organ be reasonably considered to differ also from others. These bodies, you are aware, are connected likewise with the soft commissures and grey substance of the brain. In fact, these bodies, like the ganglia, as well as the grey substances of the brain and spinal cord, which are the active portions of these organs, abound with organic nervous corpuscles; and they are connected by means of delicate grey fibrils with the plexuses surrounding the arteries, and with the ganglia in the head, especially with the ganglia of Ribes, Cloquet, and Meckel. The difficulty has been to trace this connection; and unless it be admitted that these bodies are in fact ganglia, devoted to the office of supplying vital energy to the brain, to enable this organ to discharge its functions, we are at a loss to account for their functions. These bodies are lodged more securely than other portions from danger; they are placed near the base of the brain, and in situations the least likely to suffer from injury; and they are in connection with the commissures of the brain, where it is believed the functions of volition connect themselves with those of perception and of intellect.

Although it is difficult to trace the connections of the ganglial nerves with the brain and the nerves of special sense, it is not so difficult to trace the connection of the ganglial nerves with the spinal cord and spinal nerves. You are aware that the spinal nerves, especially those of volition, are all white and tubular nerves, and are not provided with the organic nervous corpuscles seen in the ganglia and their

nerves; whilst the latter are soft, grey, and ramify in an irregular and indeterminate manner compared with the former. Now the ganglial or grey nerves, as already stated, may be traced from the sympathetics into the gangliated roots of the spinal nerves, and fibrils proceed thence to the cord itself, whilst others may be traced in an opposite direction, or from these roots along with the spinal nerves to the extremities and surface of the body. On the other hand, ramifications of the white or spinal nerves run to the ganglia of the sympathetic nerves, and in some situations, especially in the pelvis, may be traced into the splanchnic ganglia. Thus there are communicating branches of grey nerves running from the ganglial system to the spinal roots and cord; and communicating branches of white or spinal nerves proceeding from the cord to the sympathetic and ganglia. Thus the functions of each department of the nervous system are mutually aided; and impressions made upon one part of either system are extended in a more or less sensible manner to other parts.

The ganglia placed on or near the pelvic viscera admit of the clear recognition not only of the intimate structure of the splanchnic ganglia, but also of the presence of white nerves, which either terminate in them or proceed through them, and which come in greater numbers, or more palpably, from the spinal cord to them than to any other ganglia. Thus the generative and urinary organs are supplied not only with ganglial or splanchnic nerves, but also with spinal nerves, a supply of nerves from both nervous systems being necessary to the due discharge of these functions,—and the supply of each of these different systems of nerves to each of these organs is in due relation to the functions which each discharges. Thus, also, the generative organs are supplied not only with the organic nervous influence, but also with the nervous influence generated by the brain and spinal cord. And, moreover, the special ganglia devoted to these organs are mutually connected, by means of communicating branches, both with the other splanchnic ganglia and with the cerebro-spinal axis.

I have been thus particular in directing your attention to the communica-

tions between the different systems of nerves, because we are thereby enabled to explain many phenomena which occur in the course of disease. It may be, therefore, inferred, in brief, that these different systems of nerves communicate mutually by means of branches going from one to the other; and generally ganglia or plexuses are formed at or near the points of communication. There thus arises an interchange of influence, tending to the proper discharge of function; and mutual sympathy is developed when an impression is made on any one part of the circle formed by this communication and organic connection, the effects varying with the nature of the impression.

It is impossible to arrive at just conclusions as to the sympathy or mutual dependence of parts, without reference to the *vital property of irritability*, and the relations of this property with the nervous system. I need not inform you, that almost up to the present day, especially from the days of Haller, that irritability was considered as a function of the muscular fibre,—as a *vis insita* in that fibre, and not dependent upon the nervous system.

Many years ago, I directed particular attention to the subject of the irritability of different structures, and tried many experiments, especially in some of the lower animals; and, from these experiments and observations, I came to the conclusion,—now twenty-five years ago,—that the irritability of fibrous and muscular parts depends upon the organic nervous system; and, much more recently, this doctrine was advocated by Dr. Fletcher, in his works on physiology, he making a due acknowledgment to me as having originated it.

In the first place, all irritable fibres present, when under the microscope, a more or less abundant supply of those corpuscles, in which organic nerves may be said to originate, and, in fact, from which the organic fibres have been detected by the microscope to take their origin, from which they arise or proceed, and with which they abound. You are aware that the involuntary muscles, and the fibrous membranes of the hollow or tubular viscera, are supplied only with soft nerves—have no other nerves than ganglial; and that they possess great power of con-

traction both in health and disease. This power may be traced, to a certain extent, even in the membranous portion of the trachea and bronchi; and, if you refer to the comparative anatomy of these parts, especially of the trachea in some of the higher animals, you will find a singular conformation of the cartilaginous rings, remarkably well calculated to antagonise the contractile force of the fibrous structure of the membranous portion of the tube. These rings are, indeed, the antagonists of the contractile power of the fibrous structure, preserving at the same time a patent state of these tubes, and admitting of a certain degree of contraction when this structure or the soft nerves supplying it are irritated. This conformation is very remarkable in ruminating animals, and well calculated to prevent the tracheal canal from being diminished or injuriously pressed upon during deglutition and rumination.

Although involuntary fibrous structures are supplied only with organic or soft nerves, and notwithstanding that these structures receive no white or voluntary nerves, nevertheless they are impressed or acted upon by the electro-galvanic influence. In 1820 and 1821, I instituted some experiments to determine the contractility of fibrous membranes; but the galvanic agency did not appear to produce much effect until the power was very considerable. When, however, this agent is applied to the nerves of motion proceeding to voluntary muscles, the effect is very remarkable. It would appear as if the voluntary muscles were supplied with voluntary or spinal nerves in addition to the supply of soft nerves received or possessed by all fibrous structures, bestowing thereby upon these muscles a greater power of contraction; the power and character of contraction thus varying with the nature and conformation of the muscular parts, and with the nervous centres which supply these parts with nerves. I can scarcely follow the subject further, inasmuch as I have to notice other topics that will take up the greater part of our time; but you will find it fully discussed in my notes to Richerand's Elements of Physiology, and in the articles "Irritation" and "Irritability," in my work on Practical Medicine. I have there contended that irritability depends on

the organic or ganglial nervous system ; and that it is exalted in the voluntary muscles.

[To be continued.]

ON THE
USE OF THE NITRATE OF SILVER
IN THE
CURE OF ERYSIPELAS.

BY JOHN HIGGINBOTTOM, F.R.C.S.E.
Nottingham.

[Communicated by the Author.]

I HAVE found that if the nitrate of silver be applied *early*, it subdues local inflammation and irritation, if we employ, at the same time, the most efficient means for regulating the digestive organs.

At an early period of my practice, in slight cases of erysipelas, I used constitutional remedies alone, hoping that the inflammation would have been arrested; but having been so often disappointed, I now use both local and constitutional remedies simultaneously, and especially the nitrate of silver. Even in mild cases of erysipelas, in which I did not apply the nitrate of silver, I found the disease very long in duration, and I observed that the patients had sometimes numerous small abscesses, requiring the use of the lancet, which might have been prevented altogether by the early application of the nitrate of silver.

The objections I formerly entertained to the very early application of the nitrate of silver, were the pain and inconvenience attending the discolouration of the part on which it is applied, which remains for a week or more; but these objections are trifling, compared with the continued severity of the disease, if permitted to run its usual course, particularly on the head, in which there is also great danger of inflammation of the membranes of the brain, and of serous effusion. I have found that when the inflammation has been subdued by an early use of the nitrate of silver, the constitutional symptoms were immediately relieved: the constitutional disturbance is directly aggravated by the least increase of local inflammation, and in a few hours, after a decided application of the nitrate of silver, the inflammation

is arrested and gradually subdued, and with it the constitutional symptoms cease.

Even in idiopathic erysipelas, there is no period of the disease when I would not apply the nitrate of silver. I have never in any case seen metastasis, or any other bad effect, from the use of this important remedy.

When it is necessary to apply the nitrate of silver over an extensive surface, as in erysipelas, I have for some years used the concentrated solution, in the manner proposed by Mr. John Gooch, Surgeon, R.N., in a paper published in the *Lancet* of September 15th, 1832, entitled "Practical Remarks on Erysipelas, as it appeared on board His Majesty's ship, *Prince Regent*." The strength of the solution is not given in this paper; I prescribe it in the following manner:—

℞ Argenti Nitratis . . ℥iv.
Acidi Nitrici . . gtt. vj.
Aquæ Distillatæ . . ℥iv.

In erysipelas of the face, when it is spreading on the forehead, or at all on the scalp, the head should be shaved as early as possible, in order that we may trace the extent of the inflammation on the scalp, which often can only be detected by pain, or by an œdema being felt on pressure with the finger. The affected part should be well washed with soap and water, to remove any oily substance from the skin, and afterwards with pure water, to wash away any particle of soap remaining. The concentrated solution may be then applied several times on the inflamed part, and for two or three inches beyond the inflamed margin on the healthy skin. It requires to be applied very freely all over the scalp, where it scarcely or never produces vesication.

In about twelve hours it will be seen if the solution has been well applied. If any inflamed spot be unaffected by it, it must be immediately re-applied to it. Sometimes, even after the most decided application of the nitrate of silver, the inflammation may spread, but it is then generally much less severe, and it is eventually checked by the repeated application of this remedy. I have, in some cases of traumatic erysipelas, found the inflammation to spread more severely and more rapidly than in the idiopathic, but by the free

repeated application of the nitrate of silver, it has at length been subdued.

The following cases are selected to illustrate this mode of treatment:—

CASE I.—On the 6th of August, 1844, I visited Miss A., 20 years of age, of very delicate constitution, and of a strumous diathesis. She had been exposed to the rain, and had neglected to change her damp clothing. She experienced the common symptoms attending a cold, accompanied by a slight erysipelatous inflammation of the right side of the cheek and nose. The constitutional symptoms were so slight, and the pulse so little accelerated, that I wished to avoid the application of the nitrate of silver, thinking the inflammation might be subdued by other remedies. I directed thirty grains of ipecacuanha as an emetic, and in three hours after its operation two pills, containing three grains of chloride of mercury, and eight grains of the compound extract of colocynth, followed by a purgative of salts and senna, repeated every three hours until it operated freely.

7th.—Early the following morning, although the emetic and purgative had operated satisfactorily, she was labouring under a severe attack of fever; the pulse was 140, and the erysipelas had spread considerably on her face and forehead, and slightly on her scalp. I opened a vein in the arm, and bled her in the semi-recumbent position, to the amount of twelve ounces, when she became faint. Her head being shaved, the concentrated solution of the nitrate of silver was applied upon and beyond the whole of the inflamed surface, and also around the ears, to prevent them becoming inflamed. I applied it very freely over one half of the scalp, thinking this might be sufficient, as only a small portion of the forehead was affected. I prescribed two grains of the chloride of mercury, with two of antimonial powder, every six hours.

There appeared no increase of the inflammation on the 8th, and the pulse was 120; the bowels had been well moved.

9th.—She had a restless feverish night, attended with slight delirium, the pulse being 120. There was no increase of erysipelas on the face, but

it was spreading on the remaining part of the scalp. I applied the solution of the nitrate of silver over the remaining part of the scalp. Neither of the ears were in the least affected. The solution of the nitrate of silver had apparently formed a barrier, over which the erysipelas did not spread.

On the 10th the patient was in every respect improving.

From this time Miss A. recovered without interruption.

CASE II.—I visited Miss B. aged 30 years, on the evening of the 18th of December, 1843. She had been indisposed several weeks. There were considerable fever, a quick pulse, and pain of the head, and she had a patch of erysipelas on the upper part of the nose, and a little across the lower part of the forehead. I prescribed an emetic of ipecacuanha, followed by a dose of chloride of mercury and compound extract of colocynth, and the sulphate of magnesia in infusion of senna.

On the morning of the 19th the erysipelas had spread all over the face, and as high as the forehead, close to the scalp, and there was no abatement of the constitutional symptoms. I bled her whilst sitting up in bed until she fainted, and directed the head to be shaved; and I then applied the solution of the nitrate of silver all over the face, and one half of the scalp. In the evening I applied the solution of the nitrate of silver over the remaining part of the scalp. Having found that one ear had become inflamed, I applied the solution both upon it and around the other ear affected.

20th.—The fever was considerably abated; the pulse was 100. From this day the patient was convalescent.

CASE III.—I visited Miss C., aged 20 years, on the 14th of September, 1844. She had a sense of coldness and pain of the limbs the day before; she had then a slight degree of erysipelas on the left side of the nose, cheek, and upper lip. I directed an emetic and pill, with the compound colocynth powder and chloride of mercury, followed by an active dose of infusion of senna and sulphate of magnesia.

In the evening I found the erysipelas increased and spreading towards the ear. The lower eyelid was considera-

bly swollen, but the erysipelas had not reached the forehead; pulse 100; no pain of the head. I applied the strong solution of the nitrate of silver all over the inflamed surface and the surrounding healthy skin for several inches, particularly round the ear. A grain and a half of chloride of mercury, with two grains of antimonial powder, was given every six hours, and a saline effervescing medicine every three hours.

16th.—The application had been effectual, and there was no increase of the erysipelas: the pulse was 80.

CASE IV.—Mr. J. S., aged 30 years, had slight febrile symptoms on the 11th of December, 1843, which arose from exposure to cold. He had taken aperients and saline medicines. Two days afterwards there was a patch of erysipelatous inflammation on the right side of the face, without any considerable increase of fever. The nitrate of silver was well applied on the inflamed part, and on the surrounding skin. There was no further extension of erysipelas.

It will be observed in the two last cases, when the nitrate of silver was promptly applied, before the erysipelas had produced severe constitutional symptoms, that the progress of the disease was instantly arrested, and that the patients speedily recovered. In the case of Miss B—, although the erysipelas at first was suffered to proceed, the application of the nitrate of silver to the whole scalp prevented any cerebral affection, and the patient was convalescent in a short time. In the first case related, there were restlessness and delirium fifteen hours after the application of the nitrate of silver; but it was observed that the scalp where the nitrate of silver had not been applied was inflamed; and, on the decided application of the nitrate of silver on the whole of the scalp, the delirium ceased. From these cases, as well as from my experience of many years, I conclude that the speedy application of the nitrate of silver will arrest the progress of erysipelas, and prevent cerebral mischief. It is also of great practical importance to subdue erysipelatous inflammation in the commencement; for I have observed, when

the attacks have been severe, that the patients afterwards become more subject to a recurrence of the disease.

The great obstacle to the general and free use of the nitrate of silver, even at the present day, appears to arise from the impression on the minds of many surgeons that it is a caustic—a destructive agent. If they could be divested of that idea, and use it as freely as they would a common blister of cantharides, their fears would soon subside, from repeatedly observing the safety of the application, and also its beneficial effects. In my own practice I have always considered it a safer remedy than cantharides, as it may be applied freely over a surface, even where very active inflammation exists, or where there is an extensive surface denuded of its cuticle. This remedy has also the advantage of not affecting the bladder, or producing strangury.

The nitrate of silver is not a caustic, in any sense of the word. It subdues inflammation, and induces resolution and the healing process. It preserves, and does not destroy, the part to which it is applied. If we compare a caustic, as the hydrate of potassa, with the nitrate of silver, we find that the hydrate of potassa destroys and induces a slough and the ulcerative process; but if we touch a part with the nitrate of silver, the eschar remains for a time, and then falls off, leaving the subsequent parts healed.

If an ulcerated surface secreting pus be touched by the nitrate of silver, the succeeding discharge is immediately converted into lymph: it is the property of the hydrate of potassa, on the contrary, to induce not only ulceration but suppuration. In short, the peculiar properties of the nitrate of silver have long been kept unknown to us by the designation of lunar caustic, affording the most striking instance of the influence of a term, or of a classification, upon the human mind. The nitrate of silver and the hydrate of potassa (as indeed all caustics) are as the poles to each other: the first preserves, the second destroys; the first induces cicatrization, the second ulceration.

Nottingham, July 27, 1847.

REMARKS ON THE
RESULTS OF THE INHALATION OF
ETHER

IN ONE HUNDRED AND SIX CASES.

By T. SPENCER WELLS, R.N., F.R.C.S.
Malta.

THE enthusiasm with which the discovery of the effects of the inhalation of ether was received having now subsided, and a species of reaction having apparently partially succeeded, a short statement of the results of upwards of 100 cases in which I have employed the vapour before performing various surgical operations, may be of some assistance to practical men in determining upon its real value, and the simplest and most effectual mode of exhibition.

The operations were—amputation of arm, 1; amputation of parts of hand, 4; lithotritry, 1; excision of tumors, 4; removal of polypi, 2; of inverted nails, 3; of necrosed bone, 1; opening and emptying ovarian cyst, 1; strabismus, 15; incisions for various purposes, as dividing fistulae, opening sinuses, &c., 13; extraction of teeth, 59. I also applied the vapour in a case of hydrophobia, and in one of suspected malingering.

Effects.—No serious ill effects followed in any case. In only one was uneasiness excited; this was a little girl, who although not more than a minute under the influence, suffered from vomiting and faintness for nearly an hour, and remained for eight hours in a state of complete intoxication. The operation being only that for the cure of strabismus could not have induced any such condition. In three delicate women, hysteric laughing and crying followed, but never lasted more than a few minutes. One young lady appeared to be in a profound sleep for four hours, but on recovery said she had been quite sensible of every thing that had occurred during all this time, although she was quite incapable of either speaking or moving. In no male was any ill effect observed. The wounds in every case presented a healthy appearance, and the processes of granulation and cicatrization were apparently in no way affected by the etherization of the patient. In 9 cases

the inhalation was discontinued on account of suffocative feelings or convulsive motions of the patient; in 52, the persons either cried, started, or moaned during the operation, but, on recovery, said they had felt no pain, although in 14 instances they were conscious of what was being done; in 45, the success was complete, the patients giving no sign of sensibility during the operation, and on recovery appearing quite ignorant that anything had been done. The sensations described by different persons were extremely various; generally there was some heat in the mouth and difficulty of breathing, followed by vertigo and conscious loss of muscular power preceding insensibility. By some, pleasant dreams, indescribable but delightful sensations, rapid flights through the air, gorgeous visions, and unearthly music, were described in glowing language; by a few others, a sense of great oppression, resembling nightmare, was complained of; in many others as total a temporary suspension of all the mental faculties and cerebral functions had taken place as in the most profound sleep, nothing being remembered after the few first inhalations, until the period of returning consciousness. In those cases where flushing of the face, turgescence of the neck, or convulsive motions, led to a discontinuance of the inhalation, nothing more than difficulty of breathing was complained of.

It is unnecessary to say much about the cases; that of hydrophobia was detailed in the *MEDICAL GAZETTE* of July 26th; the amputation of the arm was in a delicate Maltese woman, emaciated by long-standing disease of the elbow-joint, the soft parts being so far implicated that excision was out of the question. I performed the circular operation, and fancied that the muscular retraction was less, and that of the arteries greater than usual. The woman went on well, but suffered from retention of urine for more than a fortnight. She was walking in the streets, however, before a month had elapsed from the day she lost her arm. The case of lithotritry was one in which a friend attempted to break a large stone in a very irritable bladder at the urgent desire of a patient who could not submit to lithotomy. Insensibility followed the inhalation, but

the contractions of the bladder upon the stone were not at all diminished, and the operator was obliged to desist. Slight febrile reaction alone succeeded. One of the tumors I removed from the shoulder of a very corpulent lady. It weighed ten pounds, and was rather closely adherent. The excision occupied fully two minutes, and during that time the lady said afterwards she had seen everything I did, but only felt the sort of dead sensation produced by cutting the finger nails. This and several other analogous cases have convinced me that, contrary to the statements of Dr. Snow and others, in many persons a state of insensibility to pain *precedes* the loss of consciousness,—that the faculty of perception remains after that of tactile sensibility is lost. I have observed this chiefly in plethoric persons, and in those accustomed to the free use of wine or spirits. In some such patients, when I feared to induce the full effect of the ether, I have taken advantage of this fact, and commenced the operation as soon as the conjunctivæ became injected. The result has scarcely ever disappointed me.

Modes of application.—In 69 cases I employed the apparatus of Messrs. Robinson and Hooper; in 2, that of Mr. Tracey; in 2, one procured from M. Charrière; and in 33, the sponge. Of the 73 cases in which apparatus was used, success was complete in 15, partial in 49, and in 8 the inhalation was discontinued. Of the 33 cases in which the sponge was used, success was complete in 29, partial in 3, and in 1 the inhalation was discontinued. Of 5 cases in which unpleasant symptoms followed, the sponge had been used in 3, apparatus in 2.

It will be readily understood, after a glance at these results, why I have latterly abandoned the use of apparatus, and employ the sponge alone. Indeed, the results when I used apparatus were so irregular and uncertain, and the difficulty of inducing children to inhale was so great, that I began to doubt the general utility of the discovery. The apparatus of Hooper and Robinson appeared to me particularly defective; the tube was so small, and such obstruction was offered by the sponges to the current of air, that I became convinced that some of the effects observed were not those of

etherisation, but of partial suffocation; the valves were apt to get out of order; much ether was wasted; the glass became cooled by evaporation, causing an irregular supply of vapour, and giving a less amount when the greatest was required. The closure of the nostrils also caused great uneasiness. Some of these objections are obviated in the apparatus of Mr. Tracey, others in that of M. Charrière; in the latter particularly, as the mouth-piece allows free inhalation and exhalation by the nostrils. I have also seen a four-celled instrument, by Weiss, used, but it appeared to me open to serious objections, and produced very unpleasant effects. Dr. Snow seems to have combined all the advantages an apparatus can afford, but still, I think, as a simple, portable, and effective means of rapidly inducing insensibility, the sponge must be preferred by the practical surgeon.

It is necessary to have a very fine sponge, sufficiently large to cover the greater part of the face, and hollowed out to receive the mouth and nostrils. It should be at least two inches in thickness to ensure a sufficient mixture of ether with the air passing through the pores. It should not be previously warmed by squeezing in warm water, as, in the three cases in which ill effects followed its use in my hands, I had warmed the sponge, as directed by Dr. Smith of Cheltenham, and the severity of their effects were in close relation with the temperature of the water. About two ounces of ether are generally required, and I have found common rectified ether, well shaken up with water and decanted off after the water has subsided, answer quite as well as the highly rectified washed ether procured from Hooper. Indeed, I think it is less irritating to the air-passages. The sponge should be held about an inch from the mouth during the first five or six inspirations, and gradually approached. I seldom find that more than a minute elapses before complete insensibility is produced, and as a test of this state I place more confidence in the contraction of the orbicularis palpebrarum than in any condition of the pupils. I have scarcely ever observed dilatation of the pupils since I used the sponge, and believe it to be rather the result of a deficient supply of oxygen to the

lungs; than any special effect of ether; while, if the orbicularis does not contract when the eyelids are separated by the finger, the operation may be commenced with perfect confidence.

With regard to the general utility and applicability of the discovery, I may remark that I have often administered the ether, and operated also without professional assistance, and in most cases have commenced applying the tube or sponge, leaving it to a friend when about to use the knife. Many persons, both professional and non-professional, after observing the effects of inhalation, have said that they would rather undergo an operation themselves than inhale ether, but I have never met with a single instance of a person operated on, even in so small an affair as the extraction of a tooth, who has not said that he would never in future submit to pain from the hand of a surgeon if ether could be procured.

Malta, August 30th, 1847.

OBTURATOR HERNIA.

At a meeting of the Birmingham Pathological Society, Mr. Hill presented a sketch of a hernia of the obturator foramen, and gave the following description of the case.

An unmarried female, aged 72, of spare habit, was suddenly seized on Friday, 18th of February last, whilst at dinner, with a feeling of depression, which obliged her to lie down. She did not then complain of much pain, but gradually became worse until the following Tuesday, when I was requested to see her. I found her suffering from obstinate constipation, accompanied with vomiting and great depression. She complained also of tenderness in the belly, referred to the right iliac region. There was no fulness in either groin, nor in the left lumbar region. She gradually became worse; the vomited matter acquiring a stercoraceous character, and at last having a black colour. She died on Friday the 25th.

On examination, *post-mortem*, we found the small intestines much distended, and, on tracing them downwards, the hand was directed to the right obturator foramen, into which a small knuckle of the ileum had passed. The portion strangulated did not comprise the whole calibre of the gut, but the obstruction to the passage of its contents was complete. The intestine above this part was gangrenous, and burst on the slightest pressure. Below the constricted portion, the canal was quite empty.—*Provincial Med. and Sur. Journal.*

MEDICAL GAZETTE.

FRIDAY, SEPT. 24, 1847.

Our readers will have observed, from an announcement in our last number*, that a commission has been appointed by Government to inquire into the special means requisite for the improvement of the sanitary condition of the metropolis. Among the Commissioners is Mr. E. Chadwick, who is well known for his excellent reports on various subjects connected with public health and medical police. From intelligence which has reached us, it is by no means improbable that he will be placed by Government at the head of the new Board of Health, which is likely to be one of the first results of Sanitary legislation. We know no one better fitted for such an office.

Judging from the nature of the duties assigned to the new Commission, it would appear that the attempt to legislate for the sanitary improvement of the metropolis during the last session of Parliament, was premature. We certainly were not prepared for the information that an Act of Parliament had been contemplated for the purpose of making the most extensive additions to the drainage and sewerage of this vast city, before the projectors had ascertained that the measure was practicable. It is easy to point out an evil, and, in some instances, to suggest a remedy, but the full extent of the evil must be known, in order that a remedy should be practically available. Had the act passed, it appears, from the facts which have now come to light, that, so far as the metropolis is concerned, the sewerage clauses could not possibly

have been carried into operation without producing in some districts a greater evil than that which they were intended to remove. Thus it is stated that some of the Commissioners of Sewers do not even know what extent of sewerage exists within their districts; nor is it at all known what proportion of houses are drained into the sewers which actually exist! The proportion of houses properly supplied with water is also unknown: no inquiries have yet been instituted into the quality and sufficiency of the water with which the metropolis is supplied; in short, the main elements for permanent and beneficial legislation are entirely wanting. The following statement, lately published in the *Times*, will show that proper house-drainage cannot be enforced until there has been a great increase in the number and size of the main sewers.

"The Thames is the common receptacle or sewer, of the metropolis. Whilst the tide rises the refuse is running out of all its tributary sewers, and flows up the river until all egress is stopped. It next runs down the river until it is met by the fresh tide, and is thus carried backwards and forwards within a few miles of the city. The injury done to the Thames water is established by the fact that, although the New River Company always have a large main pipe charged with it (from Broken-wharf into Cheapside), yet they are not allowed to use it even for watering the streets. The Southwark Waterworks Company found a deposit of three inches a week occasionally in their customers' water-butts, when they took their supply near London Bridge. They now take their supply at Battersea, and find fifteen inches of deposit a year in their reservoirs, whereas the Lea water forms scarcely any deposit, being almost perfectly limpid. With the exception of the New River Com-

pany and the East London Waterworks, the metropolis is supplied with Thames water, and it is therefore a most important question whether the refuse passing into it, is injurious or not. Now the quantity of drainage water annually running into the Thames is estimated at 100,000,000 tons. In one sewer, where the run of water is always sufficient to keep it clear from deposit, the proportion of animal and vegetable decomposed matter, and silt from roads, has been found to be one part in 80, in another main sewer one in 66. At this rate there is from 1,250,000 to 1,500,000 tons of solid refuse polluting the Thames every year, and this from the present extent of drainage, and notwithstanding the most injurious retention in cesspools!

The very general want of house-drainage cannot be continued much longer, now that attention is so frequently directed to the subject by the lamentable cases of fever and death from noxious effluvia. But a drain communicating with a sewer at a higher level, is an apt illustration of our drainage for more than half the 24 hours,—all the sewers being closed by the rising of the tide. Many parts of the metropolis are under high-water mark, or only a few feet above it. A sewer has to be constructed ten or twelve feet under-ground, and is consequently so many feet lower than the Thames at high water; and the drainage is impeded, or altogether stopped, whilst the water in the Thames rises and falls to that extent. It is, therefore, very evident that it is neither safe to convey all the fever-generating refuse into the Thames, nor is its level adapted for a receptacle for all the refuse from the metropolis.

When the contents of the sewers are in a stagnant state, a deposit is formed, and when afterwards a south wind blows into them at low water, the

smell arising from the drains is most intolerable, especially if passing into a house which is shut up for the night. A medical man, who has an extensive parochial practice, has said very truly, 'How the sewers can benefit the health of the poor living in courts and alleys, I am at a loss to imagine.' 'If every tenement is to have a communication with the sewers, you will create a greater nuisance; and the house will be more unhealthy than at present, arising from the smell of the sewer.' Dr. Rigby has given evidence that these noxious effluvia are by no means confined to the dwellings of the working classes, but they exist also in wealthy districts, and even in some of the newly-built houses in Hyde Park.

The present sewers, when constructed, were not intended for the removal of heavy refuse; as water-closets were only introduced during the present century. There is to this day by no means a general connexion between the latter and the sewers: our house-drainage is notoriously defective, and yet the refuse which does pass into the sewers, is with difficulty removed. Man-holes, or side-entrances to sewers, are now found in localities where they were not previously needed, and flushing apparatuses are used to wash them out. In one locality, men were lately occupied for about a month in taking out a black deposit which had there accumulated. It is beginning to be admitted that the existing state of sewers, is the latent cause of much disease and death,—'a great deal of active disease, which creeps on gradually and insidiously, may be traced to this cause.'

The *insufficient capacity* of the sewers themselves, closed for so many hours, forms also a serious obstacle to extended drainage. For example, at present a very heavy fall of rain fills

the lower parts of Holloway with several feet of water in the areas of the houses. When a sewer is constructed, this water, with the house-drainage and refuse which may have accumulated, will swell the floods which occasionally come down so suddenly and powerfully as to overcharge and endanger the city sewers, even with the present amount of drainage. Thus we find 'the Bishopgate Street sewer at times overcharged and pouring back the upland waters.' The Walbrook sewer was destroyed by the same cause in 1821, and even the Fleet-sewer has been often surcharged."

With such a representation of the state of the metropolis, in respect to one of the most important branches of sanitary legislation, it is at least satisfactory to know, that, by issuing a Commission to inquire into the extent of the evil, and the practicable means for removing it, the Government has taken the only course which is likely to be attended with successful results. It is, we think, sufficiently evident, from the facts above mentioned, that something more is needed than conveying the refuse into the present sewers, in order that it may be discharged into the Thames.

It has fallen to our lot at various times to announce the singular aspects under which "medical responsibility" presents itself on the Continent; but the following instance differs, we believe, from any hitherto recorded:—About two years since, a Dr. Liégard, of Caen, in Normandy, was requested to give his services as accoucheur to a young female at her delivery. The next day he signed at the Registrar's Office the usual certificate of the birth of the child, and stated that its parents were unknown, the child being illegitimate. In company with a M. Quatre-veaux, and at the request of the

mother, he selected a nurse for the child at a fixed amount of wages. For a certain period the wages were duly paid, in some instances by Dr. Liégard, and on other occasions by M. Quatreveaux, who, we presume, was the father of the child.

Several months' wages were allowed to fall into arrear, and the nurse sued the accoucheur and M. Quatreveaux. They were condemned to pay jointly the full amount claimed—135 francs. Quatreveaux being insolvent, the local judge decided that Dr. Liégard must pay the whole amount. The doctor appealed against this decision, with the unfortunate result that the judgment as to damages was not only confirmed, but he was also condemned in all the costs of the proceedings. The Court considered that Dr. Liégard had allowed his feelings to render a slight service to his patient, to carry him too far, and that he was therefore justly responsible to the nurse!

We cannot quarrel with the decision: the act was altogether extra-professional, and wholly unconnected with Dr. Liégard's duties as accoucheur. We have not the least doubt that the same decision would have been made by our own Courts; and we therefore think it worth while to put this case on record, as a warning to those accoucheurs who are disposed to do what may appear very trivial, but which may in some instances turn out to be very responsible, acts of kindness for their patients.

We are glad to perceive that medical practitioners are adopting a very effectual plan of preventing the evils which are likely to result to the health of the metropolis, from the accumulation of the putrescent remains of the dead in confined localities. A case has been recently investigated at one of our police-courts, the details of which are

sufficiently revolting; they show that there is a strong anti-sanitary party, who are disposed to throw every obstacle in the way of those who seek to improve the public health.

Mr. J. Friskin, of John Street, Bedford Row, one of the trustees of Elim Chapel, in Fetter Lane, appeared to answer the complaint of the Commissioners of Sewers for the City, made under the Contagious Diseases Prevention Act, for suffering an accumulation of offensive or noxious matter to remain on a piece of land, and in a building upon it used as a chapel. The joint certificate of Dr. Farquhar and Mr. G. A. Walker, a surgeon, that the chapel was in a filthy and unwholesome state, likely to be prejudicial to the persons frequenting it, and to occupiers of houses adjacent, was put in.

The clerk to the solicitor of the commissioners stated the nature of the charge, and said he should call two medical gentlemen who had signed the certificate, to show the necessity for the prompt interference of the magistrates.

Dr. Farquhar, of Drury Lane, was examined.—He had visited the chapel twice. On the first visit, on the 2d inst., he descended into the vault, and saw two or three heaps of broken up coffin wood, saturated with the fluid matter which had flowed from decomposed human bodies. He perceived the stench from them in the chapel above. A carpenter who was with him opened one coffin, and found in it what appeared to be portions of three human bodies. One was a portion of a woman; but the effluvia was so overpowering, that he turned away without minutely inspecting the parts. They appeared to be portions of bodies that had been cut up.

In reply to questions from the magistrate, the doctor said he could not ascertain the number of coffins. There was a door in the floor of the chapel, which admitted the visitor by a cellar, each side of which measured about 40 feet. The coffins were piled up six deep, without any earth between or over them. The depth of the cellar was 12 feet in some parts, and reduced by the piles of coffins to four feet in others. On the second visit he found

a coating of earth had been laid over the coffins, and there was no smell. There was a vault full of refuse bones, &c., opening into one side of the cellar, from which a very noxious effluvia came.

Cross-examined by Mr. Friskin.— Could not say there were not three feet of earth now laid over the coffin. They did not unscrew the coffin they opened, but the lid was unfastened, and to the best of his belief there were portions of three bodies in the coffin. Heard the trustees promise Sir James Duke to build up the entrance to the side vault. Did not observe the date of the coffin he had spoken of.

Mr. Walker, of St. James's-place, Westminster, surgeon, described the vault and its contents in much the same manner. He found a heap had been recently shifted from one side to the other of the cellar, and a terrible stench had arisen from disturbing the mass. Thousands appeared to have been buried in a place adapted only for hundreds. The abatement of the effluvia was not proof of the removal of the danger. When the effluvia was slight, the nose immediately became accustomed to it, and failed to distinguish it after the first moment. The existence of the mass he saw was prejudicial to the health of the neighbourhood, but it could not be disturbed without increasing the danger. If man poisoned the air he breathed, he must pay the penalty.

Mr. Alderman Hooper asked Mr. Friskin when the vault was last used as a place of interment?

Mr. Friskin said, at least three years and a half ago. The trustees, when they took the chapel, had a clause inserted in the lease, that the relatives of persons interred there should not have a right of burial there. They had lately removed some of the contents of the vault from one side to the other, and the effect of this had been exaggerated very much. The nuisance was now abated, and the chapel being private property, no one had a right to intrude or interfere with it. They had employed Mr. Fowler, a builder, to do what was necessary, though in fact the place could not longer be deemed a nuisance.

The magistrates said, if the trustees

disputed their authority, it was the duty of the justices to assert it, and protect the public health. They should insist on the best remedy being immediately applied by the Commissioners of Sewers, if the defendants did not choose to obey the order that would be made.

An order was accordingly made for the immediate abatement of the nuisance.

Wherever the bodies of the dead are thus accumulated in a confined space, the medical practitioners of the neighbourhood should examine the locality, and ascertain whether the nuisance cannot be abated under the provisions of the Contagious Diseases Prevention Act.

Reviews.

A Guide to the Use of the Buxton Waters. By WILLIAM HENRY ROBERTSON, M.D., Physician to the Buxton Bath Charity. Fourth Edition, revised. 12mo. pp. 32. London: Churchill; and Moore, Buxton. 1847.

DR. ROBERTSON'S pamphlet contains a brief but judicious statement of the properties of the Buxton waters, and of the classes of disease in which their use is advisable or otherwise. The details are of a very plain and circumstantial character, being apparently written to meet the comprehensions of non-professional readers. The following extracts are fair examples of the author's mode of treating the subject

"Persons in health should not either bathe repeatedly in these waters, nor drink them. Supposing the stomach and bowels to be in good order, or that care is taken by some fitting medicine to put them into good order in the first instance, and that there is no lurking ailment that would be a just and sufficient prohibition, there can be no reason why an occasional bath should not be taken—say one or even two baths a week, for the purposes of cleanliness and comfort; but it may be confidently affirmed that in no case is it right, or even prudent, that healthy persons should use these baths oftener; and it may be added, that it might be unwise, under these circumstances, to remain in the water longer than three or four minutes.

* * * It will be understood, that, under doubtful circumstances, the warm baths can be used much more prudently than the natural baths; and that it is only in rare cases, and never when proper care is taken, that a single bath, or anything but a course of such baths, can be hurtful to the really healthy. As to the drinking of the waters, it may be said emphatically that they should not be used, except by those invalids whose cases require them." (pp. 24-5).

We apprehend that the above caution must be sufficient to keep the whole of the healthy portion of the Buxton visitors fairly out of (mineral) hot water during their residence in that locality. The pleasure of testing the powers of a medicated bath would be much more than counterbalanced by the preparatory aperient course and stethoscopic examination.

"General debility, the consequence of febrile attacks, whether rheumatic or not; local weakness of the spinal column, the joints, or the mucous membranes and passages; muscular, synovial, and periosteal rheumatism, if not in an acute stage; gout, especially perhaps chronic gout, or the sequelæ of more active or acute gout,—are all cases for the use of the Buxton baths. Dyspepsia in many of its forms, and especially when dependent on, or largely mixed up with, general feebleness and relaxation; neuralgia, and more especially when partaking most of rheumatic character; some cases of paralysis, especially such as may be ascribed to cold, or to spinal affections, or are of long standing,—are all cases for a trial of the baths, or the waters internally, or both. Cases of general debility, consequent on the decline of life, or on having lived hard, and expended unwisely the nervous energies, either by intemperance or debauchery, or sedentary occupations and over-working the mind,—are those in which these waters often do much good, and in which they deserve to be tried. In cases of irregularity or relaxation of the female constitution, their effect is very often marked and rapid, and deserves to be better known than it has even of late years become. To this sufficiently long list must be added many of the milder forms of scrofula, to which, indeed, some of the above may be often referred, and which are often materially benefited by the use of these waters." (p. 27).

We think that Dr. Robertson's pamphlet may, without much danger, be placed in the hands of those patients visiting Buxton who insist upon the very prevalent modern doctrine that the sick person is the best judge of the

treatment which should be adopted in his own case. It may also be read with some advantage by the profession.

A Synopsis of the Diseases of the Human Ear. By WILLIAM HARVEY, Surgeon to the Royal Dispensary for Diseases of the Ear, &c. London: Churchill.

It speaks well for the advancement of a science towards its completion, when its leading facts are susceptible of being reduced to a tabular form and presented to the inquirer upon a single sheet; and the power of thus systematising a great variety of complicated facts in such a manner as to enable any portion of the detail to be comprehended at a single glance, indicates the possession of no ordinary mastery over the subject. This task certainly appears to us to have been effected with remarkable success by Mr. Harvey in his tabular *Synopsis of the Diseases of the Ear* now before us, in which we find presented on a single sheet a nosological classification of the different maladies to which the organ of hearing in the human subject is liable, together with a useful (though necessarily extremely brief) outline of their symptoms, causes, and treatment. It is, of course, not to be imagined that any thing approaching to a competent knowledge of a subject so complicated and so important as this can be acquired by the study of a mere tabular synopsis; but we can assure our readers, that, as an introduction to the practical study of this subject, or as a means of refreshing the memories of those who have long since acquired some knowledge of the matter, Mr. Harvey's table will be found of great and sterling utility. We regret to see that it contains some gross typographical errors—blemishes which become especially salient in a publication of this description.

Medical Trials and Inquests.

[THE following trial, which took place at the Liverpool Lent Assizes for 1847, will be found of great interest in a medico-legal view. The subjoined authentic report was forwarded to us by one of the medical witnesses for the Crown. It has been for a considerable time in type; but we have pur-

posely delayed its insertion until an analysis of the soil of the churchyard in which the deceased was buried, had been made. We have now Mr. Watson's report on the chemical composition of the earth taken from near the grave of the deceased. We shall insert this, with some general remarks on the case, in our next number. It is, we believe, the only instance which has yet occurred in England, of medical evidence respecting the presence of arsenic in an exhumed body having been set aside on the assumption that the arsenic had been washed into it from the earth surrounding the coffin.]

LIVERPOOL.—CROWN COURT.

(Before BARON ALDERSON.)

TRIAL FOR MURDER BY POISONING WITH ARSENIC—ALLEGED INFILTRATION OF ARSENIC INTO THE DEAD BODY FROM THE EARTH AROUND THE COFFIN—ACQUITTAL OF THE PRISONER.

ELIZABETH JOHNSON, aged 33, who was attired in widow's weeds, and was accommodated with a seat in the dock, was indicted for the wilful murder of William Henry Johnson, on the 27th of November last, at Barton-upon-Irwell, by administering arsenic to him.

Messrs. HULTON, MONK, and FOLLOCK, appeared for the prosecution, and Mr. Sergeant WILKINS and Mr. OVEREND for the prisoner.

Mr. HULTON stated the leading facts of the case on the part of the Crown, and proceeded to call evidence to substantiate the charge.

Several witnesses were called, who proved that up to the Friday before deceased's death he was in his usual health.

Martha Livesey said:—I live at Barton Bridge with my mother, who keeps a shop there, and sells drugs. I have known the prisoner for about a year; I recollect her coming to the shop in November last; it was on Friday, the 27th of November; she asked for three pennyworth of arsenic. She said it was for rats which were in a gutter near her house, and said that she intended to put the poison into the gutter. I asked her if there were any children in the house, and she said there were not. I served her with the arsenic, which she took away with her. I recollect being at the police office at Croft's Bank on the 4th of January last; Forrester the policeman was there; I saw him with the prisoner at his house; she went up stairs with Mrs. Forrester; when she came down again, Forrester asked her if she knew me; she said she had no recollection of me; I said it was strange she did not know me, so often as she had been at

our shop; she said she did not know me, and had never been in the shop; I said she had been there frequently. I told her she had been there for arsenic; she said I was quite mistaken, she had never been in the shop for that; I told her she had, but she still denied it.

Sarah Hardman corroborated the evidence of the last witness, having been present when the prisoner bought the arsenic. She added, I saw the prisoner the same forenoon, afterwards, in Eccles Lane, going towards Barton.

Jane Bradshaw.—My father keeps the Trafford Arms at Barton Bridge. I know the prisoner. I saw her on the 27th of November, when she came and called for a glass of gin-and-water. I saw her go into Mrs. Livesey's shop.

John Whitehead.—I knew the deceased, Johnson. I lodged with them for a few weeks. I left home on the 24th of November, and returned on the 28th. I saw Mrs. Johnson when I returned; she said her husband was very poorly, and that he was taken ill on the Friday evening. He had vomited very much. I asked her if she had sent for any assistance. She said she had not, but had sent for some staff for him from Mr. Hepworth's, the surgeon. I saw Johnson on the Sunday morning in his bed; he appeared to be very poorly, though he did not complain much; he had been vomiting; Mrs. Johnson removed the utensil, and I did not observe it. I saw him again two or three times on the Monday; he was then very ill. I saw him again on Tuesday, and he was still in the same state. Mrs. Molt was from home, but returned on Tuesday evening. I saw Johnson again on Wednesday evening; he was very ill indeed. Mrs. Johnson asked me to go up stairs and read for him. I went, and while I was reading he vomited very much; that was about twelve o'clock. Mrs. Johnson came up to him; no one else attended to him. I saw him two or three times on the same afternoon; on the last occasion I was called up, it was to assist Johnson out of bed; the prisoner's father called me up. Generally speaking, I was not much at home.

Benjamin Mellington called.—I am a cousin to the prisoner. I went through Barton to Davy Hulme one day in November. I called and saw the deceased Johnson. He was in bed, and seemed to be very sick; I asked him if he was in pain; he retched very much, as though he wanted to vomit, but could not; he complained of being thirsty. I was with him about half an hour. I dined there, I believe with Mrs. Johnson; she seemed quite cheerful, and did not appear to apprehend any danger.

Margaret Breat called.—I live at Croft's Bank. I am housekeeper to Adam Roger-

son, the owner of the house that the deceased Johnson lived in. I went to his house the Monday night before he died, a littler after six o'clock. I went for a fowl. I saw no one in the house at first, but went to the stable and saw Mrs. Johnson and Joseph Bethell attending to the horse. I said, you appear busy. She said, "We are a bit." She took me to another place and showed me some pigs. She told me her husband was very ill. I said "Is he?" She said, "Yes—why, have you not heard?" I said, "No: I saw him come from the coal-pit one day last week." She said, "That must be Wednesday then." I said, "What's to do with him?" She said, "It's a bad cold, and other things: will you go up stairs and see him?" I said, "No, for I am in a hurry; master told me to make haste back, as he was ill in bed." We then went into the house, and she gave me the fowl, and I went to my master's house. She walked a little way with me, and began to talk again about Johnson being so ill. She said that he would never come out of his bed again. I said, "Aye, woman, how you talk!" She said, "He never will, for his inside is quite done. He has been complaining for six months. When he has been at his work, he has come in and sat down, and said how poorly he was." I said, "Have you no doctor?" She said, "No, but I have sent for one this morning, only he has not been. Whether they told him or no, I don't know; but we are expecting him every minute." I said, "Aye dear, I didn't think he'd been so ill, else I would have gone up stairs and seen him. But I will come when I have time, for I am fond of Johnson." She said she would be very glad if I would, "for he would not come down yon stairs alive again; I have quite prepared myself for it, though I have been laughing and talking with you so." She also said she had been at Worsley that day to tell her father, and that she had brought some hay back in the cart, that the horse might have something to eat after Johnson was dead. She told me to tell Mr. Rogerson that if she left the house she should give him quite sufficient notice. The last time I saw Johnson he was in very good health.

Joseph Bethell called.—I am a weaver at Croft's Bank. I knew Johnson very well. I saw him at the kitchen door; the prisoner was there also, killing a chicken to make some broth for Johnson, as he was poorly and very dry. I saw Johnson vomit while I was there. I knew Hewitt. I saw him at our door about ten days after Johnson died. Our door is about fifty yards from Johnson's. He said something to my wife. Mrs. Johnson had called not many minutes before: it was after dinner. I had seen Hewitt about there once before, but I did

not take any notice of him; that was nine months before. I remember helping Mrs. Johnson to clean the horse on Sunday night when Margaret Brent came there.

Mary Bethell called.—I am daughter of Joseph Bethell. I know Abraham Hewitt. Have seen him at our house.

Cross-examined.—I went for Mr. Hepworth, the surgeon, to come to see Johnson, and for some medicine for him. That was on the Saturday night. My mother also went for some medicine for him. I was helping Mrs. Johnson to clean her house. I had some cold beef-steak there on the Saturday night. I had some chicken broth at dinner. I don't know whether Johnson had any of it. I was there on Sunday. I did not see any stuff like water in a bottle. I remember the Friday before the Saturday. I dined at home, and we had some bacon and peas. Mrs. Johnson was there and had some too, as she said she was very fond of them. Mrs. Johnson had either a blue, or red, or black plaid dress on. It was a plaided dress. I think there was more red in it than any other colour. It was the dress she usually worked in.

Mr. John Hepworth, surgeon, called.—I am a surgeon at Croft's Bank. I knew Johnson about twelve months before his death. On the 30th November I visited him. He was in bed. I asked what was the matter with him. He said he had severe pain in his bowels, and that he had been vomiting. He also complained of intense thirst, and of slight pain about the stomach. He expressed himself as much relieved by the medicine I sent down. He said he first felt ill after he had taken his supper, I believe on the Thursday evening. He said, that in the course of two or three hours afterwards he became very sick, and was also purged very much, and that he had been very ill ever since. I think he mentioned Thursday as the day. He said he had had a beef-steak supper. He did not vomit while I was with him, but I saw some frothy mucus which he had previously thrown up. I prepared some more medicine for him.* I saw him again on Wednesday morning: he complained then of uneasiness in his throat—a kind of choking sensation. The pulse acted freely. The sickness had continued, and the purging had not ceased. He continued to take the medicine. I assisted Mr. Leigh in making a post-mortem examination on Thursday, the 3rd December, the day after Johnson died. On opening the cavity of the chest, the external viscera appeared perfectly healthy.

* It consisted of bicarbonate of potash and spirit of nitre. There was some James's Powder given him on Monday (about two grains), with a little acetate of morphine and three quarters of a grain of calomel.

There appeared to have been an extravasation of blood in the lining of the stomach, and it was inflamed; the same appearances were manifested throughout the whole of the interior of the bowels, but diminishing gradually in intensity from the stomach downwards. The lips were excoriated externally, and the gullet was much inflamed. The inner lining of the bladder was also inflamed. The lungs were healthy, but there was an unusual scarlet colour about them. The appearances I noticed were attributable to any cause that would produce inflammation,—as the application of cold externally to the body; but it is very unusual to meet with such a combination of unnatural causes as I witnessed. The appearances might have resulted from cold, but I never met with such a case. I never had but one case where death had taken place from arsenic. The appearances I noticed in Johnson might have been produced by arsenic. Antimony would not have produced such an appearance, nor any of the medicines which had been administered. I examined the contents of the stomach with Mr. Leigh. We found a small quantity of a substance which I believe to be arsenic. It was not so large as a grain of sand. It was a slight cloud fused upon a copper plate. I cannot undertake of my own knowledge to say that it was arsenic. I believe that arsenic may pass out of the system in six or eight days. The frothy mucus I saw, which Johnson had thrown up, had no bile in it. I thought he had a slight fever. I was present when the body was afterwards exhumed. I lost my dissecting knife when I opened the body of Johnson, and it was found in his inside when he was exhumed. It was undoubtedly his body that was exhumed.

Cross-examined.—Mr. Thomas Forrester, the police officer, was with Mr. Leigh and myself when the body was opened. Some portions of the viscera were taken away by Mr. Leigh to be experimentalised upon at home. The body was interred in a few days afterwards. Marsh's test was adopted by Mr. Leigh. Five of Mr. Johnson's brothers were present when he was exhumed. I do not know that any one was there on behalf of the prisoner. As far as I remember, I only saw Johnson twice while he was ill. Cutaneous diseases are not particularly common amongst the working people. There is a solution of arsenic used for such a complaint, to be taken internally; it is generally coloured red; I never knew it of any other colour. There was a solution of magnesia sent to the deceased, by Mrs. Hepworth, on the Saturday afternoon. I cannot form any opinion as to the weight of the substance I observed on the copper plate; it was not as much as would cause death if it had been

arsenic. I saw a child of Abraham Hewitt's, and attended her at Mrs. Johnson's, in June, 1846; my bill for attendance was made out to Mr. Hewitt.

Mr. John Leigh called.—I am a surgeon at Manchester, and lecturer on organic chemistry at Pine-street School. I assisted Mr. Hepworth on the 3rd of December to make a *post-mortem* examination of the body of Johnson. I observed the lips, they were excoriated; there was no other unusual appearance outwardly, except a frothy mucus at the mouth and nostrils. On opening the chest I observed that the lungs were healthy in structure, but of a bright red colour to an extent that I had never previously observed; the heart was healthy; the gullet much inflamed; the upper curvature of the stomach was much inflamed, the lower curvature but little affected; the bowels were inflamed in patches to a considerable extent; the liver was healthy; the opening of the urethra into the bladder was much inflamed; I did not observe the interior of the bladder. I removed the whole of the stomach with its contents, and a small portion of the bowels and liver; I subjected them to a test. By the copper test I obtained a slight film on the copper; I subjected it to further operations, but the quantity was so small the test was unsatisfactory, as to whether it was arsenic or antimony; I cannot undertake to say what it was. I attribute the symptoms I observed to the action of arsenic; that is from a subsequent examination; at that time I could not say positively what the appearances were owing to. I was present when the body was exhumed in the early part of this month; it was the same body I operated upon before. I removed a large portion of the alimentary canal, a portion of the liver, of the gullet, the heart, and of the muscle of the thigh; likewise some fluid blood from the cavity of the chest, which might be mixed a little with water, in consequence of the grave being damp. They were placed in vessels and packed in a hamper, which was sealed by myself and delivered to the policeman, Maybury, to convey to Mr. Watson. I did not see the hamper opened, but I saw it again on the following Thursday but one for the first time afterwards; the vessels had been removed from it then. Mr. Watson examined the contents of one of those vessels in my presence; he subjected them to Marsh's test. A portion of the large and small intestines (about 19 ounces) were charred by sulphuric acid and heat; the partially dried mass was lixivated or dissolved in distilled water, and a portion introduced into an apparatus containing pure zinc and pure sulphuric acid. Arseniuretted hydrogen was evolved. On ignition, the gas deposited, on a cold por-

celain plate held above it, metallic films; the films were discharged by chloride of lime, from which I was aware that it was not antimony. This is considered a test as to the films being arsenic, though whether chloride of lime will discharge any other metallic films besides arsenic I am not prepared to say. We next burned a quantity of the same gas in an apparatus in which the accompanying vapour could be condensed and collected. On testing this condensed vapour with ammonio-nitrate of silver, a yellow precipitate was produced; on testing it with ammonio-sulphate of copper, a green colour was produced; on testing it with sulphuretted hydrogen, a slight yellow colour was produced; another portion of the charred mass was treated with distilled water, and used for the copper test; a metallic film resembling arsenic was produced upon the copper. That constituted the whole of the experiments we made, only that we coated some thin glass plates with arsenic derived from the other parts by Marsh's test. The result at which we arrived was, that arsenic was present in the body, but as to the quantity we could not form any opinion; my opinion is that the death of Johnson was caused by arsenic.

Cross-examined.—I believe that no other substance than arsenic would produce the results I witnessed on testing the intestines in the manner I have described; of course, the results of those experiments would depend upon the purity of the tests; the parts of the body were put into stone jars with lids, and the whole were placed in the hamper, which was sealed up.

By the Judge.—I am not aware whether arsenic is used in the glazing of the ware into which the parts of the body were placed; I noticed no yellow or white spots on the stomach on my first examination of it.

Mr. Henry Hough Watson called.—I am an analytical chemist at Bolton, and have been so for fifteen or sixteen years. I have had considerable experience in testing substances for detecting the presence of arsenic; I was with Mr. Leigh and Mr. Hepworth at Deane Church yard on the 9th of March; I furnished the jars for the purpose of removing portions of the body; they were well washed and quite clean; after portions of the body were put into them the lids were put on, and tied over with bladders. The substances taken were the heart and some blood in one jar, a kidney in another, the tongue and gullet in another, a portion of muscle from the right thigh in another, the intestines in another, and a portion of the liver in a glass jar. The jars were then put into a hamper, with the exception of the glass jar containing the liver, which I took home with me. The hamper was sealed by me and Mr.

Leigh, and delivered to Inspector Maybury. I submitted the liver to Marsh's test, and had evidence of the presence of arsenic. [The metallic deposits, on slips of glass, in small glass tubes, and on Wedgwood's ware pestles, were here exhibited to his lordship and the prisoner's counsel.] That liver had never been out of my custody except for a minute or so that the policeman held it while I was engaged in getting other portions of the body. I unpacked the hamper myself; it was precisely in the same state as when packed up and secured. I believe that the glazing of the jars would have no effect upon the various substances which were placed in them. Earthenware is sometimes glazed with lead, and sometimes with common salt; I don't know what the brown ware jars had been glazed with in which I had the substances from the body put in Deane Churchyard. I detected arsenic in all the substances taken, but most in the intestines. There was some in the kidney also, and a very slight indication of it in the gullet and tongue. I used Marsh's test to these, which is the best for detecting small quantities. I place the utmost reliance upon Marsh's test as an accurate one. I also used Reinsch's test for some portions of the intestines. I burnt some of the gas produced by acting with Marsh's apparatus in the bulb of an oxidizing tube, and I got some water condensed in the bulb, which I found to be arsenious acid by trying it with ammoniacal nitrate of silver, which produced a yellow precipitate, and by ammoniacal sulphate of copper, which produced a green precipitate. I also tried it with sulphuretted hydrogen, which produced a yellow precipitate. I tried experiments with the metallic deposits, by applying chloride of lime to those obtained by Marsh's process on glass and porcelain, which removed them. That, together with the other results, indicates that the metallic deposit is not antimony, and that it is arsenic. From my own experience and knowledge I should say it was arsenic, though I cannot say chloride of lime will not remove other substances besides arsenic. It will not remove antimony. I also exposed some of these metallic deposits on glass to a temperature ranging from 355 to 365 degrees, by which they volatilized and left the glass. This is another proof that the metal is not antimony, but arsenic; antimony does not volatilize at the temperature mentioned, but remains permanent, while it is one of the properties of arsenic to become volatilized at that temperature. Some of the slips of copper on which I had got a strong steel-like metallic deposit by Reinsch's test, were exposed to heat in a glass tube, and the metallic deposit became oxidized, and depo-

sited itself higher up in the tube. That oxide I afterwards boiled in some distilled water, and tried again with the ammoniacal nitrate of silver, ammoniacal sulphate of copper, and sulphuretted hydrogen, and they gave the same precipitates as before, from which I concluded that the water contained arsenious acid. I have no doubt that the body I saw exhumed contained arsenic. I cannot say how much—perhaps not more than a grain, if so much, in the nineteen ounces of intestines I operated upon.

Cross-examined—I believe Marsh's test to be the best for detecting minute quantities of arsenic. Mr. Leigh stands very high in his profession. I don't know that arsenic is used in the glazing or manufacture of stone jars; I know that it is used in the manufacture of some kinds of glass.

Thomas Forrester, a police officer, corroborated the statement of Miss Livesey, as to the conversation between her and the prisoner at his house. When witness took prisoner into custody she said she did not know what arsenic was, and had never bought any in her life. Searched the house, but found no arsenic.

Mrs. Ann Hepworth deposed, that on the 28th of November the prisoner came to Mr. Hepworth's surgery, saying that the deceased was ill, and had got, she thought, the English cholera. Witness gave her some fluid magnesia.

Cross-examined.—The little girl Bethell came first, and the prisoner about ten minutes after.

Mrs. Maria Moulst said, the deceased and his wife did not live happily together, and quarrelled a good deal. They at one time quarrelled about her going to Flixton Wakes. She spoke to several angry expressions of the prisoner on various occasions respecting her husband, saying she wished he was stiff—that she would make a cheap burying of him, and would not ask one of his folks. Witness told her it was very wicked to talk in that way; that he looked as likely to live as she did. The prisoner said he did not. The day he died, when told that Mr. Hepworth thought him better, she said he would never get better, and would die that night.

William Chapman lived at Sale Moor, where deceased formerly resided as tenant to Abraham Hewitt. He used to be very often at Johnson's house. He went round to the back door. Never saw Johnson there but once, when Hewitt was there, and Johnson was very angry, and said he would not have him coming there. Deceased took the poker, and they had a fight.

Thomas Brooks, gardener at Sale Moor, deposed to seeing the prisoner meet Hewitt in a wood there, and had seen him kiss her.

In cross-examination the witness admitted that he had had rough music before his door on account of an imputation against himself respecting a young woman, although a married man.

Elizabeth Wood stated, that she had seen the prisoner and Hewitt in bed together in Johnson's house at Sale Moor, and that she had told witness she liked him better than Johnson, and that if she could not have him without she would poison Johnson. The following Monday prisoner came to witness's father's house and borrowed a shilling. She said she would go and see "if she could get without him without being found out."

Ellen Gately deposed to Hewitt's frequent visits to Johnson's house in his absence. Had seen him in Johnson's bedroom. Once saw Johnson strike him with a potato-fork on finding him in the kitchen. Prisoner had told witness that she liked Hewitt's little finger better than Johnson's whole body, and that she wished he never would come in alive. The witness, though a married woman, on cross-examination, admitted having cohabited with a person called Brazendale. Was charged with felony respecting a watch, which was taken from Johnson's house. Brazendale was transported. Has since been charged with felony at Knutsford.

The deposition of Robert Churchill, now deceased, was read, to show the intimacy of Hewitt with the prisoner, and the use of expressions respecting her husband similar to those already given.

James Shawcross and William Longshaw gave similar testimony.

Mr. SERJEANT WILKINS proceeded to address the jury on behalf of the prisoner; he carefully went through the whole of the evidence, and concluded by an eloquent appeal to the feelings of the jury on behalf of the prisoner.

The learned JUDGE, in summing up, commenced by explaining the relative duties of the counsel for the prosecution, the counsel for the defence, his own duty, and that of the jury in so important a case as the present. He then carefully went through the evidence, commenting particularly on the circumstances under which the arsenic had been detected. He said Mr. Hepworth had admitted he was not so much a chemist as a surgeon. He said the small quantity of matter detected by him and Mr. Leigh before the body was buried was not more than the size of a grain of sand; now, of these two medical men, Mr. Leigh was the more competent: he was a lecturer on medical jurisprudence; and if, on the first examination of the body before interment he was not satisfied whether arsenic was present or not, he ought not then to have

stopped; certainly that was the most likely time to have found the arsenic if any was present. He says on this occasion he did not detect anything which he was sure was arsenic, and it was not till the second examination of the body, after it had been exhumed, and when he had the assistance of Mr. Watson, the chemist, that he was sure of the presence of arsenic (this was Mr. Leigh against Mr. Leigh). If, before the body was buried, he was not satisfied, nothing could have been easier than to have gone to the coroner and told him so; when, undoubtedly, he would have had an order given him to go and obtain such other parts of the body as he might require. Mr. Leigh says Mr. Watson made the chemical examination after the body had been exhumed, and we have heard that that skilful chemist tested his distilled water, and all the other ingredients which he used, and the vessels in which he operated on the various parts of the body, to be sure that they were quite pure, in order to preclude the possibility of arsenic, by such medium, from entering into the parts he operated upon; *but the quantity of arsenic which Mr. Watson found was but very small, not more than a grain, if so much, in the nineteen ounces of intestines; and as the grave was wet, may there not be a possibility of this small quantity of arsenic being derived from water which had drained into the body out of the soil of the churchyard?* It would have been more satisfactory if the arsenic had been detected in the first instance, instead of after it had been lying for three months in the ground. His lordship drew particular attention to the statement made by Mr. Leigh, that in cases of poisoning by arsenic white or yellow spots are usually found on the coat of the stomach, and that in this case such were not in the stomach when the examination was made only a few days after death, but there were red patches. He advised the jury to weigh carefully the evidence bearing upon the purchase of arsenic by the prisoner, and that also which tended to show a motive for her making use of it in order to remove her husband. Her conduct during the illness was not to be thought inconsistent with the conduct of a wife attached to her husband. The questions for the jury to decide were these,—Were they satisfied that the deceased died from the effects of arsenic? Were they satisfied that the prisoner bought the arsenic just before the illness? Were they satisfied that she had a motive for getting rid of her husband? And was her conduct such during his illness as to lead them to a conclusion that she administered the poison to him? If they were of opinion that he died from arsenic, then the charge

against the prisoner would become a serious one for their consideration.

The jury retired for about half an hour, and at twenty minutes past seven returned into court with a verdict of *Not Guilty!*

Correspondence.

MEDICAL WITNESSES AND CORONERS' INQUESTS.

SIR,—In compliance with your recommendation, I have attentively perused the Abstract of the Medical Witnesses Act, and particularly the 6th section, as given in the MEDICAL GAZETTE, vol. xviii. page 814, wherein I find, (sec. 1st,) "Upon the holding of any coroner's inquest, if it shall appear to the coroner that the deceased person was attended at his death, or during his last illness, by any legally-qualified medical practitioner, it shall be lawful for the coroner to issue his order for the attendance of such practitioner as a witness at such inquest; and it shall be lawful for the coroner to direct the performance of a post-mortem examination, with or without an analysis of the contents of the stomach or intestines, by the medical witness, or witnesses, who may be summoned to attend at any inquest." I also find in sec. 6th—"In every case where any medical practitioner has not obeyed such order, he shall for such neglect or disobedience forfeit the sum of £5 sterling, upon complaint thereof made by the coroner, or any two of the jury, &c." Notwithstanding all this, it is very evident that the coroner, at the inquest held at Carlisle on the 29th of May ult., either was authorized, or considered himself authorized, to send the materials to a medical chemist to be analysed, or to summon a medical chemist to the inquest for that purpose, but that he studiously avoided such proceeding, and solicited the physician and surgeons to perform the chemical analysis, in order to save the county the additional expense of an analysis by a practical chemist—so that he not only considered himself warranted to employ a medical chemist, but knew that the expense of so doing would fall upon the county. Really the county of Cumberland ought to be very grateful to this considerate and economical coroner; but what will the medical or practical chemists say to him for thus depriving them of their just rights and privileges? "Practical chemists," you remark, Sir, are not the best qualified to conduct such investigations; they may be able to give a good opinion on the chemical part of the inquiry, but can they conduct a post-mortem inspection, or distinguish the duodenum from the oesophagus?" &c.

Now, Sir, I may be in the wrong, or I may be very stupid, but, in my opinion, the post-mortem examination of the body, and the chemical analysis of the contents of the stomach and intestines, are totally different; the first belongs to the surgeon—the second to the chemist, who is required, by his art, to ascertain whether any poison is discoverable in the tissues or the contents of the materials sent to him, and, if so, what that poison is. It is of no consequence whether he understand anatomy or not—it matters not to him, neither can it in any way influence his chemical manipulations to know whether the parts, with their contents, sent to him for analysis, be the stomach and duodenum, or the bladder and rectum—whether they belong to the brute creation or the human species—the only questions he is required to answer being, do these articles, now sent to you, either in their tissues or their contents, contain any poison? If they do, what is that poison? It is the business of the surgeon to make the dissection, to separate the diseased from the healthy parts, and to decide whether any organic lesions he may discover be the result of disease, acute or chronic, or the effects of poison introduced into the system; this is quite as much as he ought to be required to do, and, I firmly believe, quite as much as any member of the Council of the Royal College of Surgeons of England would consent to do; I do not believe any one of them would undertake the chemical analysis of the contents of the stomach and intestines, or of any other part—neither do I believe any coroner would venture to require it.—I am, Sir, your obedient servant,

A CONSTANT SUBSCRIBER.

August 1847.

SIR.—Had you inserted my letter, on "medical witnesses and coroners' fees for analyses, &c." I think it very probable your correspondent "*Medicus*" would not have written the letter which appears in the *MEDICAL GAZETTE* of August 27th, page 392. I have, therefore, taken the liberty of enclosing a second copy of my letter, in order that you may now, should you see no objection, supply the deficiency.* I will also further remark, that although the physician and surgeons, who undertook the chemical analysis at Carlisle, proved by their report to the coroner that they were fully equal to, and skilfully performed their task, yet we must not expect to find, generally, either in London or the country, physicians and surgeons either able or willing to undertake so serious a duty; neither would it be acting fairly towards the "medical or practical chemists, or toxicologists," call them which you please. That the same person may be

* This refers to the letter printed above.—Ed.

an able-physician or surgeon, and an expert chemist, and that, upon an emergency, he may with propriety act in both capacities, there can be no doubt; but such is not customary; indeed in those cases where the life or death of the suspected party depends on the report of the physician or surgeon, and the analysis of the practical chemist, it would be much better that both should be employed; (the expense I put quite out of the question). The chemist would be very likely to err in pathology, and the physician as likely to blunder in a chemical analysis; but let each be confined to his legitimate province, and their separate reports would strengthen and confirm each other. The division of labour has long since been proved to be advantageous to all parties; the pure physician and the pure surgeon are considered to lose caste if they meddle with pharmacy; why then ask them, or permit them, to meddle with chemical manipulations?—indeed, as I have before observed, I do not believe any member of the Council of the College of Surgeons would undertake the chemical analysis of the contents of the stomach or intestines, nor do I believe any coroner would venture to require it. Why, then, are such anomalies permitted in the medical profession?—we do not see them elsewhere—we do not ask the man who weaves the cloth to make it into a coat—we do not ask the mason, or bricklayer, who builds a house, either to lay the floors, or paint the walls—neither do we expect the carpenter to paint the interior, although he might be capable of doing it: let every man keep to his proper vocation, and remember the old adage, "*Non omnia possumus omnes*." I perfectly agree with "*Medicus*," that "to detect arsenic in the contents of the stomach, or in gruel, is manifestly as easy to the non-medical as to the medical chemist; but to speak positively as to its having got there by having been swallowed during life, or introduced into the body after death, might be rather a delicate matter for a practical chemist, unless he were also an anatomist or physiologist;" but this is no part of his business—the physician or surgeon will be able to decide, from the symptoms during life, and the appearance of the stomach after death, whether a corrosive poison has or has not been taken, and, also, whether that poison has been introduced before or after death; but the delicate and accurate analysis of the practical chemist can alone determine, with certainty, which of the corrosive poisons has been employed.—I am, Sir, your obedient servant,

A CONSTANT SUBSCRIBER.

. We insert these letters because we know the writer to be a highly respectable medical practitioner, and that he is anxious

to improve medical evidence. We can, however, by no means agree with him that the important duties of inspecting a body, and of conducting an analysis of the contents or tissues of the viscera, should be placed in the hands of different persons. Such a practice has not been adopted in any country, and would, we believe, be productive of great mischief. "Practical chemists," who do not belong to the medical profession, are most unwilling to undertake these inquiries, knowing that an examination before a Court of Law must extend far beyond the sphere of their knowledge. Let our correspondent imagine an eminent practical chemist, who has detected arsenic, thus cross-examined by a prisoner's counsel: Q.—In what part of the stomach did you find the arsenic? A.—I cannot say, as I have never studied anatomy, and I do not know one end of the stomach from the other. Q.—Are you quite sure that it was the stomach in which you found arsenic? A.—I was told it was the stomach, but I am unable to swear positively. Q.—Then, in fact, it may have been the lower bowel or rectum in which you found the poison? A.—Yes. Q.—What is the effect of arsenic on the mucous membrane? A.—I cannot say; I know nothing of physiology or pathology. Q.—What is the smallest dose of arsenic which will kill an adult? A.—I am unable to say, as I have not studied the effects of poisons. Q.—Upon your oath, sir, will you undertake to swear that the arsenic which you say you found either in the stomach or rectum, you do not know which, must have found its way there during life, and could not have been put into the organ after death? A.—I am unable to answer this question; all I can say is, that it was arsenic; but, being a practical chemist, I was not required to inspect the body, and as I am not acquainted with the effects produced by arsenic on the living subject, I cannot say, from the appearance of the animal membrane, whether the arsenic was placed in contact with it before or after death! Let our correspondent imagine the defence which would in such a case be got up at the expense of the "practical chemist." It is very true that the points here left doubtful might be removed by re-examining other witnesses; but the evidence is thereby rendered most unnecessarily complicated and confused, and the chances of its being altogether overthrown, are greatly increased.]

Let the Government employ well-paid medical inspectors, according to the plan adopted in Germany, and our correspondent would find no reason to complain. These officers are not only good practical chemists, but good practical anatomists and pathologists, and possess that degree of scientific knowledge which is so necessary to the detec-

tion of crime. In a country in which attorneys are transformed into coroners, and where the legal fees are insufficient to pay even the expenses of properly-conducted medical inquiries, it is not to be supposed that the important duties connected with such investigations, can be properly discharged!

There are cases in which the special services of chemists may be required, because analyses are now very frequently entrusted to incompetent persons; but this is owing to the vicious system adopted in England, i. e. of leaving the settlement of these important questions to mere chance. If any change be made, it should be, not in the appointment of practical chemists, but of proper medical officers to superintend all inquiries which come before the Court of the Coroner.]

Selections from Journals.

CASE OF DOUBTFUL SEX, WITH MENSTRUATION THROUGH THE PENIS. BY S. H. HARRIS, M.D. OF CLARKSVILLE, VA.

THE existence of hermaphrodites, or those creatures which were at one time supposed to unite in the same individual the distinctive organs of the two sexes, is now, I believe, wholly denied by physiologists. Creatures of our race, however, have frequently been noticed, presenting such equivocal appearances in their sexual apparatus as to render their sexuality exceedingly doubtful. A monster of this singular character is now living in Mecklinburgh county, Virginia, and is probably as remarkable a case of the kind as any recorded in the annals of physiology.

In describing the creature I shall use the masculine pronoun man, more for the sake of convenience, than from any conviction of its grammatical propriety.

Ned, a slave and house-servant, wearing man's apparel, is about eighteen years of age and probably five feet eight or nine inches high; and though not corpulent, is rather robust than otherwise. His head is large, with a coarse masculine face, wide mouth, thick lips, feminine voice, and a chin entirely destitute of beard. His skin is soft and delicate, with upper and lower extremities well formed and rounded, with the exception of his feet, which resemble very much the males of the African race. Thus far, however, his general appearance presents nothing very remarkable, or anything calculated to excite doubts as to his sexuality. His shining ebony skin and rounded limb are not uncommon with negro boys, trained up as house servants among the luxurious livers of the South. But on opening his vest and shirt bosom, there are presented two large and well-developed protuberant mammae, having

all the external characteristics of the breast of a healthy well-formed young woman. His neck, shoulders, and chest, partake likewise of this feminine character, having the soft and voluptuous outline of the female. On examining the external genital organs, which, by the way, are exhibited with marked reluctance, a strange and anomalous appearance is presented. The pubis is large, prominent, and covered with hair as in the female, and but for the conspicuous projection of a dwarfish looking penis, about an inch long in the usual situation of that organ, the creature would at once be pronounced a woman. This penis is naturally formed in every respect, and eminently endowed, as he informed me, with virile sensibility. Immediately below it is a cleft or fissure running back as in the female organ, to the perineum, the sides of which are formed of thick folds of skin, resembling somewhat the scrotum, and shaded with long hair, representing tolerably well the external labia of the female. No testicles can be found. On separating the thighs the fissure is found to be from an inch to an inch and a half deep, smooth at the bottom and exactly in the situation of the vagina. The cavernous portions of the penis may be distinctly felt through the walls of the cavity near the bottom. The membrane lining it appears, in fact, to be only a continuation of the outward skin, but is more soft and delicate; without, however, any of the characteristics of the vaginal mucous membrane. Pressing the finger on the bottom it yields so readily as to induce the belief that there is a cavity within, the outlet to which is merely closed up by the skin or membrane stretched across the bottom of the fissure. But the anomaly does not stop here. This singular creature has been regularly menstruating for three or four years *through the penis*, attended in its inception and progress by all the symptoms which commonly characterize the catamenia in young females. So well marked are the returns of this monthly discharge by the usual disturbance of the system, that the elder members of the family are never at a loss to determine when he is under its influence. As in most females in every station of life, there is likewise at such periods a shrinking from observation, and the constant exercise of a sleepless vigilance in preventing exposure. The amount or character of the discharge has never been clearly ascertained, but from his own imperfect account of it, and the evidences furnished by his linen, it differs not very materially either in quantity or quality from that of a young woman.

The question here naturally presents itself, to which of the sexes does this human being belong? In view of all the facts stated, the conclusion, I think, is forced upon us, that the female organs predominate, or, in other

words, that while the creature has only one of the organs of the male, and that an imperfect one, he has within the pelvis, the interior genital apparatus of the female. That there is a uterus with its appendages I feel no doubt; or whence this regular catamenial discharge, and all those attributes, both moral and physical, which mark the presence of such an organ?—But it has been remarked that he displays in his general deportment a decided partiality for the society of young females, and it has even been noticed that he exhibits towards them at times strong salacious propensities. This, I think, can be easily accounted for on the supposition, that he has been, from childhood, taught to look upon himself as a male, and now, in imitation of others, deports himself as such to the other sex. Whether his amorous advances to the dusky maidens around him have ever resulted in any practical display of virility, is unknown. In the absence of all information on the subject, it is fair to conclude, that no seminal discharge has, or ever will, take place. Such a phenomenon as a regular menstrual discharge, and the production of semen masculinum, from the same set of organs, would place the creature in a new order of beings, with sexual endowments and faculties but a little less remarkable than those ascribed to the fabled hermaphrodites. But whence comes this peculiar fluid? If furnished by a womb, how does it make its way into the urethra?—Or is it thrown off by the bladder acting vicariously for a contiguous organ, the natural outlet of which is occluded in the way before mentioned? These are questions certainly of very little importance in a practical point of view; but relating as they do to the interesting science of physiology, are deemed not wholly unworthy the consideration of the learned.

Medical Intelligence.

MEDICAL EDUCATION AT CONSTANTINOPLE.

THE Medical School of Galata, Constantinople, is in a thriving condition. The courses of lectures are at present attended by 454 pupils, of whom 409 are matriculated students. The periodical examinations are rigorously conducted, and every student who, after two years' study, does not reach the upper class, is thereafter excluded. Sixty pupils have been expelled during the present year, either for ignorance or misconduct. There are ten classes of students, and more than one half (238) are placed in the first class.

It is a remarkable fact that Chairs of Medical Jurisprudence and Police are already

established in this infant institution; and, that Turkey is in this respect in advance of England, is proved by the fact, that, in the event of murder, there is a government medical officer specially appointed to conduct the inspection and report on the cause of death. The Royal College of Surgeons of England, it is well known, does not consider a knowledge of these subjects to be of any importance to its members, or of any utility to society: hence the study of them does not enter into its curriculum! The Government, too, leaves the selection of medical men for the purpose of making inspections and reporting on the cause of death in cases of suspected murder, to parochial beadles and the local constabulary! The power of ordering post-mortem examinations is also left in the hands of a functionary who is in most cases a non-professional man!

MEDICAL APPOINTMENTS.

At a general meeting of the governors of the Royal General Dispensary, Aldersgate Street, held on Wednesday, the 22d instant, Dr. Brownless of Charterhouse Square, Physician to the Metropolitan Dispensary, and Dr. Goodfellow of Bedford Place, Russell Square, were unanimously elected Physicians in the room of Doctors Peacock and Garrod.

APOTHECARIES' HALL.

NAMES of gentlemen who passed their examination in the Science and Practice of Medicine, and received certificates to practise, on Thursday, Sept. 16, 1847:—George Moseley, Hampstead—Samuel Burgess, Frodsham, Cheshire—Thomas Parker Rust, Wells, Norfolk.

OBITUARY.

DIED, on the 12th of August, at Milan, Doctor Trinchinetti. Although this gentleman had not attained his thirty-fifth year, he had acquired among his countrymen, a high reputation as a physician.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer 29.87
 " Thermometer 56.3
 Self-registering do. max. 88.5 min. 30.
 " in the Thames water — 58' — 56.8
 * From 12 observations daily. † Sun.

RAIN, in inches, 0.19: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was no less than 6.4° below the mean of the month.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Sept. 11.

BIRTHS.	DEATHS.	Av. of 5 Sun.
Males.... 686	Males.... 519	Males.... 479
Females.. 611	Females.. 531	Females.. 461
1277	1040	940

DEATHS IN DIFFERENT DISTRICTS.

West—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	143
North—St. Marylebone; St. Pancras; Islington; Hackney (Pop. 366,303)	208
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London (Pop. 374,789)	196
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar (Pop. 393,247)	248
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich (Pop. 479,469)	245
Total	1040

CAUSES OF DEATH.

CAUSES OF DEATH.	Av. of 5 Sun.
ALL CAUSES	940
SPECIFIED CAUSES.....	938
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	226
<i>Sporadic Diseases, viz.—</i>	
2. Dropsy, Cancer, &c. of uncertain seat	108
3. Brain, Spinal Marrow, Nerves, and Senses	157
4. Lungs and other Organs of Respiration	226
5. Heart and Bloodvessels	25
6. Stomach, Liver, and other Organs of Digestion	94
7. Diseases of the Kidneys, &c.	8
8. Childbirth, Diseases of the Uterus, &c.	10
9. Rheumatism, Diseases of the Bones, Joints, &c.	7
10. Skin, Cellular Tissue, &c.	2
11. Old Age	50
12. Violence, Privation, Cold, and Intemperance	28

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	14	Convulsion.....	53
Measles	37	Bronchitis	13
Scarlatina	49	Pneumonia.....	21
Whooping-cough..	19	Phthisis	108
Diarrhoea	119	Dis. of Lungs, &c. 13	
Typhus	81		
Dropsy.....	14	Teething.....	14
Sudden deaths ..	14	Dis. Stomach, &c. 5	
		Dis. of Liver, &c. 14	
Hydrocephalus..	23		
Apoplexy.....	21	Childbirth	3
Paralysis.....	19	Dis. of Uterus, &c. 6	

REMARKS.—The total number of deaths was 100 above the weekly summer average. The deaths from diarrhoea and typhus fever are still on the increase.

NOTICES TO CORRESPONDENTS.

We beg to assure our correspondent at East Retford that we have endeavoured to act with strict impartiality in the matter.

Dr. Smith's paper, with the communications of Dr. Thomson and Dr. Coley, will be inserted in the following number.

Mr. C. J. Sheet.—A communication will be sent in reference to the proposed exchange with the American Journal of Dental Science.

A letter respecting the Medical Directory is under consideration.

Mr. J. Barnett's case of Spontaneous Rupture of the Uterus will be inserted next week.

Dr. H. Gavin.—The pamphlets have been received, and the suggestion of our correspondent shall be attended to.

Dr. Wardell.—We will endeavour to comply with the wish of our contributor.

Lectures.

COURSE OF SURGERY,

Delivered in the years 1846 and 1847,

By BRANSBY B. COOPER, F.R.S.

Surgeon, and Lecturer on Surgery at Guy's Hospital.

LECTURE XI.

ULCERATION.

Mechanism of ulceration—Hunter's definition—description and uses of the absorbent vessels—three kinds of absorption: Ulcerative—Progressive—Disjunctive.—Description, causes, and treatment of the two first—granulation—cicatrisation—characters of healthy and unhealthy granulations—objects of suppuration—ulcers—their causes—description and treatment of different kinds of ulcers—healthy—exuberantly granulating—indolent—(Dr. Bird's galvanic apparatus.)

ULCERATION, or Ulcerative Inflammation, as it was termed by John Hunter, is another phenomenon, an altered action in the capillaries of a tissue, resulting from inflammation. Sir Astley Cooper defined it as "an absorption of any constituent part of the body;" but this, in my opinion, gentlemen, describes only part of the condition, as it does not intimate the necessity for any prior change in the constituents before they can be taken up by the absorbents; that is to say, that their disintegration, or, if I may use the term, proximate decomposition, must first occur. May I not fairly suggest a degree of parallelism between the removal of a part by ulceration, and the change which the ingesta must undergo before they can be converted into chyle and taken up by the lacteals?

The result of the following experiment will illustrate my meaning. If you feed a dog on albumen (supposed to be the kind of food nearest approaching to blood, and therefore *à priori* most readily digested), and examine the contents of his stomach an hour and a half after, not a trace of the albumen will be found; but if you examine another dog two or three hours after he has been fed with white of egg, you will find the digested mass again converted into albumen, having become vitalised, and then fitted to be converted into living blood.

So, in ulceration, the parts to be absorbed must undergo a somewhat similar change before they can be removed, and this change may be induced from a morbid condition of the blood itself, of the capillary vessels, or of the tissues. Yet it is to be considered

XL.—1035. Oct. 1, 1847.

that this primary influence, upon any of these systems, will ultimately affect them all, which is probably necessary before the absorption can be completed.

At any rate the absorbent vessels are intimately concerned in the process of ulceration, and may be said, indeed, to form an important part of the capillary system, for they clearly enter into the composition of every vascular tissue in the body. John Hunter says, "Ulcerative inflammation is that action which a part falls into, from a disposition to absorb itself even to the solution of its continuity."

Mr. Travers, in his excellent work on Constitutional Irritation, asks, "Is ulceration a negative process, a mere defect of nutrition, as adhesive deposition is considered a surplus of nutriment, or is it a special action of the vessels whose office it is, in health, to remove superfluities, and regulate the growth of the body?" I should say that it never results from an increased action of the absorbents only, for, as I have already observed, it is necessary before a part can be absorbed that it should experience certain vital changes to render it capable of undergoing that process; and that therefore stimulating the absorbents to action could avail nothing unless the structure to be removed had undergone the change fitting its constituents to be taken up by those vessels. The functions of the absorbent vessels is a subject of as deep interest to the physiologist as to the pathologist, for they are not only constantly employed in taking up nutritious matter, fitted to be converted into blood for its replenishment, but they also take up various extraneous substances which are unfitted for such a purpose, and are destined either to be thrown off by excretion or to be converted into some new compound.

May we not consider that the absorbents admit of being divided into those of the arterial and those of the venous system, that to the former may be attributed the absorption of nutriment, and to the latter the removal of deleterious matter? the one set ultimately form the lacteals, the other the lymphatics: the latter contain hydro-carbon, and not the nitrogenised matters imbibed with the food. It is true that much nitrogen is conveyed to the kidneys to be excreted, but that nitrogen had never been submitted to the action of the stomach, but resulted from disintegration of worn-out tissues. Nor is this mere hypothesis, for various experiments instituted by Magendie and Fodera tend to strengthen the supposition. The absorbents are as much in action during the healthy condition of the body as in disease, and are constantly conveying into the blood various disintegrated substances; some of these may be fitted for further use,

while others, which would prove pernicious to the arterial blood, are voided by the excreting organs.

It is proper, Gentlemen, that I should give you some examples of the uses of the absorbent vessels; and one of the most familiar instances of the important functions of the nutrient absorbents is presented in that action by which they supply the blood with chyle, the great source of nourishment to the former fluid. During fever we have constant examples of the absorption of fat; perhaps for the conversion of this substance into its ultimate elements, and to their unusually rapid union with oxygen, may be attributed in some measure the increase of the animal heat inseparable from febrile action. So also during protracted abstinence we find the fat becomes absorbed, but even before this can occur there are always febrile symptoms indicating a morbid condition, which probably result from the changes undergone by the fat before it can be absorbed. Extravasated blood, from external injury, is removed in great measure by the absorbents; this fact is so familiar to surgeons that they never think of making incisions for the purpose of removing it, when in an ecchymosed state, but leave it to the natural process of absorption.

Abscesses sometimes undergo spontaneous cure by the absorption of the pus. This, however, is of rare occurrence, and it seems rather a difficult process for nature to perform. We generally find, concomitant with the phenomenon, a high degree of irritative fever: this action is of such frequent occurrence as to render it a matter for practical consideration whether it be not better in all instances to evacuate the pus than to leave its removal to a natural operation.

Thus, Gentlemen, by jealously scrutinising the secrets of nature, by watching her own methods of cure, by observing her steady unaided struggles towards reparation under disease, you will learn to understand the functions of the absorbents, whose unremitting efforts to reduce the various systems accurately balance the influence of the capillaries, which are as untiringly engaged in perpetual renovations; the two together thus preserving the natural and beautiful symmetry of the human body: and the healthy performance of this system has been aptly termed modelling absorption.

Thus far I have described an entirely healthy action, but we sometimes find absorption producing lesion or solution of continuity, which can only be considered a morbid state of function.

Surgeons speak of three kinds of ulceration; the terms, however, given to them are rather expressive of the effects produced than of the nature of the ulceration itself; but as the division will lead you, gentlemen,

to the consideration of the circumstance under which ulceration occurs, I think it advisable to dwell a little on this part of the subject.

Ulcerative, progressive, and disjunctive absorption are the terms alluded to, and in each of these conditions the tissues to be removed must have undergone disintegration before they can be absorbed.

This *ulcerative absorption* may arise from the inability of parts to support their vital action under certain diseased conditions, and, according to John Hunter, may accrue either from some source of irritation set up, or from a weakness depending on defective nutrition.

There are various circumstances which may give rise to irritation, and which may depend upon constitutional or local causes. It is generally very difficult to ascertain whether the morbid action commences in the blood, blood-vessels, or tissues. We frequently see, for instance, small ulcers, especially in the lower extremities, occur without any obvious cause, even without premonitory symptoms. It can scarcely be believed that such a local lesion should result from deterioration of the general mass of blood without any constitutional disturbance, or without even the vessels of the part affected being primarily disordered. It is therefore probable that, under these circumstances, some slight morbid change in the tissue itself leads to a condition from which proximate decomposition and absorption ultimately result: whether induced by an increased action of the vessels, from an unusual demand made upon them by tissues for supply of nutrition, or from the weakness and inability of the tissues to receive that which the vessels have already supplied, either the one condition or the other would lead to absorption.

We have in the case of syphilitic inoculation, leading to the formation of chancre, an instance of ulcerative absorption resulting from altered condition of tissue, and without any premonitory constitutional symptoms. Here the syphilitic virus is the source of irritation, and invariably leads to ulceration. Pressure also, when applied externally, that is to say upon the surface, leads to ulceration if it be acting with sufficient force to overcome the powers of the part to resist its influence, but if it be applied with a force less than the power of resistance in the part pressed, it, on the contrary, produces a thickening.

Weakness, or a want of power in a part to maintain its natural condition and functions, may give rise to its ulceration. Of this we have examples in the facility with which cicatrices (compared with originally formed parts), ulcerate from slight exciting causes. Surgeons lance the gums of children

long before the teeth have approached the surface, because they are aware that the cicatrix will be much more readily removed under the pressure of the tooth than the originally formed gum. From the same vital conditions old united fractures will become disunited if subjected to continued irritation, or from being deprived of their necessary nutrition: frequent instances of this kind occurred to the sailors who accompanied Lord Anson in his voyage round the world; for many who were attacked with scurvy suffered from the disunion of old fractures, the ulceration of the cicatrices. This phenomenon results probably from the facility with which the constituents of newly formed parts are capable of being resolved into their ultimate elements; but whether this depends upon a defect in physical cohesion, chemical combination, or want of vital power to resist morbid action, is yet unknown to the pathologist.

A further proof of the influence that debility possesses in promoting ulceration, or, perhaps, I ought rather to say, the feebleness of its power to resist it, is, that the parts most distant from the heart are more prone to ulcerative absorption, than in proximity to that organ.

When ulcerative absorption goes on very rapidly it is distinguished as acute ulceration, and may be attended with severe pain and a considerable degree of irritative fever. Generally, however, neither pain or fever are prominent features of the disease, not even when its progress is most rapid. Indeed, ulcerative absorption seems to have but little effect upon the constitution, although the constitution powerfully effects ulceration. The character of the pain, when it occurs, is also peculiar, being generally described as a gnawing sensation, the intensity of which depends upon the irritability of the patient. Opium is indicated in large doses when this symptom is present. Indeed, I principally depend upon opium as the remedy to check ulceration, both administered internally and applied topically, and if this remedy fails to produce the desired effect, I apply either strong nitric acid or lunar caustic to the ulcer, more especially if the surface of the sore be very painful, as these agents destroy the sentient extremities of the exposed nerves, and not only immediately diminish the pain, but, at the same time, lessen the irritability of the sore, which is probably the principal cause of their inducing a healthy action. So that perhaps it may be said that opium and escharotics are applied in these cases upon precisely the same principle. Iodide of potassium, mineral acids, bark, and other remedies, may be also required in protracted cases to uphold the constitutional powers during the progress of the cure.

Progressive absorption.—The best example which I can give of this kind of absorption is the slow removal of parts subjected to an internal pressure, as from the growth of an aneurismal tumor slowly eating its way through all obstructions as it progresses towards the surface. There is no provision of nature more wonderful than this tendency of ulceration towards the skin, for although a large internal tumor may be in contact with the surrounding viscera, and pressing equally in every direction, ulceration will only occur towards the exterior of the body, and, indeed, thickening of the structures in contact with the growing mass will take place in every other direction, so as to prevent it extending itself inwards. This kind of absorption is called "interstitial," and is not attended with suppuration when acting on bones. We have a proof of this, not only in the absorption of the spine and ribs from the pressure of an aneurismal sac, but also in the absorption of the alveolar process after the extraction of a tooth, and the spontaneous removal of small exostoses.

Disjunctive absorption is intended to denote the process set up for the separation of a dead from a living part, constituting that particular barrier between them which is termed "the line of demarcation." I shall describe this phenomenon when I arrive at the subject of mortification.

Although suppuration does not always attend ulceration, as I have said in speaking of the progressive ulceration of bone, it usually attends ulceration of the other tissues of the body to a greater or less extent.

All structures are not equally susceptible of ulceration. Parts possessing but little vitality—an inferior degree of organisation—ulcerate with considerable difficulty, as tendons, fascia, bones, and especially the cuticle.

An important surgical point, gentlemen, is connected with this fact: when any of these tissues form the parietes of an abscess, they should be early opened, so as to let out the matter, for its liberation by the process of ulceration would be tedious, and the constitutional disturbance proportionably severe.

As ulceration leads to the solution of continuity of parts naturally united, it may be inferred that the reunion must be effected by some healing process, and this is termed

GRANULATION.

When solution of continuity has occurred as the result of ulceration or loss of surface by an incised wound, so that the edges cannot be brought together, when a large cavity is left after the evacuation of pus from an abscess, or extensive surfaces are exposed, from which sloughs have been separated, they must all heal by granulation.

With a little consideration you will per-

ceive, Gentlemen, that there is not the wide difference between the process of union by adhesion and by that of granulation which you might at first suppose, the former being but a direct exudation of fibrin from the capillaries, while the plastic deposition in the latter results from a newly constructed apparatus for the purpose of its elaboration, and may therefore be considered as a secondary mode of adhesion, in contradistinction to the so-called "first intention." Perhaps the greatest distinction between Nature's first intention and her second, or granulation, is, that the latter is accompanied by suppuration, while the former is not. Granulations are formed by the organization of the lymph effused from the surface of the ulcer becoming vascular from the entrance of the vessels of the original structures; and this is clearly evinced by the fact, that the granulations are usually of the same nature as the structures from whence they arise. These newly-formed granulations in their turn throw out a fresh layer of adhesive matter, and thus layer after layer of granulations are produced, until they fill up the cavity to be healed. Such a surface is usually called an ulcer, but it is not intended to imply by that term that ulceration is still going on; for, on the contrary, this condition indicates a reparative action, and, perhaps, a part in such a state would be better termed a "granulating sore." Healthy granulations have a natural tendency to contract, and thus diminish the superficies as well as the depth of the wound. The granulations are, at this period of the process of healing, so closely united, and their capillaries so freely inosculate, that any attempt to separate them immediately produces hæmorrhage.

To complete the cure which has proceeded thus far, it is necessary that the granulations should be covered with skin, and this is effected partly by an elongation of the original skin, and partly by the formation of new. The original skin is stretched by the contractions of the granulations, and drawn nearer to the centre of the sore, and not unnaturally, because previously, while the ulcerative process was going on, it had receded, in consequence of its elasticity. Its capillaries inosculate with those of the other tissues which had supplied the granulations, and new skin becomes formed, cutis and cuticle together; and when they completely cover the granulating surface, cicatrization is said to be completed.

You will observe, therefore, gentlemen, that cicatrization depends, in a great measure, upon the contractile power of the granulations, so that any circumstance which tends to prevent this contraction impedes the process of cicatrization. This often happens when sores are situated near the surface of bones, as on the head, and fore

part of the legs, in which situations you will frequently see very extensive cicatrices, from the quantity of new skin required to fill up the abraded surface, and the slight power of its approximation, in consequence of its inextensibility in those situations. In cicatrices of this kind, the new skin always appears as if put upon the stretch to cover the wound, and the old skin seems puckered as if by the drawing up of the new; by use, however, it soon becomes loose and flexible. Under all circumstances, the formation of a new skin is a process performed with difficulty; and this fact should be borne in mind by every surgeon, in order that, during the performance of an operation, he may be sure to leave plenty of skin to cover the factitious wound.

The healthy state of the granulations may be readily judged of by their appearance,—a circumstance well worthy of attention, as by a just appreciation of their actual condition the surgeon is enabled to judge in a great measure of the constitutional powers of his patient, and to regulate his internal remedies and topical applications accordingly.

When granulations are in a highly reparative condition, they present small conical projections of fibrin of a bright red colour, which is owing, not so much to the great quantity of blood sent to them, as to the proximity of blood to the air, from which it appears to undergo a sort of aërication. But when the surfaces of the granules are pale, or approach to a livid colour, it will be found that the healing of the wound is protracted, and generally some constitutional derangement will be observed.

Granulations, however, differ somewhat in appearance, according to the peculiar tissues from whence they originate, although they are generally ultimately convertible into that tissue from which they receive their blood. This, however, is not invariably the case, as we find, in the reunion of a muscle by granulation, that the newly-formed connecting medium never possesses irritability; that is, the power of contraction upon the application of a stimulus. Even in the reunion of ruptured tendons and ligaments, it requires a considerable length of time for the newly-formed structures to be submitted to tension, before they acquire the inextensibility of the original tissue, and lose an elasticity which interferes with the natural function of the part.

There is reason to believe the capillaries of synovial membranes are not capable of restoring the lost tissue; for, although there may be occasionally found adventitious sacs containing a fluid resembling synovia, the identity of the two is very doubtful; and in dislocations, where a supplementary joint is formed, no new synovial capsule is generated, but the head of the dislocated bone

becomes eburnated, and so friction is diminished, but there is no synovia secreted unless some of the old capsule is left entire.

The pus which covers the surface of the granulations of a healthy sore not only performs a useful office in forming a coating of moisture, at the same time defending the newly-formed tender structure from the deteriorating influence of external agents, but it also prevents the absorption of injurious matters; for there can be no doubt that even miasmata may affect unhealthy granulating surfaces; and there is every reason to believe that hospital gangrene and other specific actions are induced in sores through the absorbent powers of granulating surfaces.

The influence of medicinal applications on the constitution, when employed on ulcers, is an every-day occurrence; and you will frequently see, gentlemen, in the course of your practice, patients as powerfully affected by mercurial and opiate dressings applied to sores, as completely as if those remedies had been administered internally.

The description of the healing process of a deep wound has, I trust, shewn to you the power of the granulations to take on the nature of the tissue from whence they derive their blood,—as, for instance, the new skin is never permanently formed until the granulations reach to a level with the integuments.

As this process of granulation for the cure of wounds does not invariably proceed in a healthy manner, it becomes necessary that I should explain to you the different kind of granulating sores which come under the notice of the surgeon in the category of ulcers; and, at the same time, I shall endeavour to point out to you the various constitutional and local influences which lead to the particular aspects they present, and the appropriate remedies which should be employed for their amelioration.

ULCERS, OR GRANULATING SORES.

There is considerable difficulty in defining and classifying ulcers so as to furnish a ready or scientific method by which you may be enabled to judge of the true nature of this disease. It is not ætiology alone which will teach you all that is required, nor will the situation or form of the ulcers, or even the nature of the discharge, afford you sufficient knowledge for the appropriate treatment of every variety of sore. The cause which originally produced the ulcer may be long removed, and the defect in reparation be depending on something quite different from that which first induced the solution of continuity.

It seems, however, philosophical in the first instance to look for the cause; but it must be borne in mind, that, whatever may

have led to the ulceration, the constitution the situation, the form of the sore, and the tissue affected, may tend to particular modifications, and require a direct application of means to remedy any baneful effects they may have induced on the ulcer.

I think it may simplify the matter if we commence by the consideration of the various kinds of sores ætiologically, dividing their causes into

External or Local.	{ Mechanical
	{ Chemical
Internal or Constitutional.	{ General
	{ Local
	{ Combined.

But even with this view there may be some pathologists who regard the proximate cause of all ulcers as internal, as ulceration must be considered a vital process which operates from without, even in cases where the remote cause—the application of an irritant from within—first excites the local action: as, for instance, in the inoculation of syphilitic virus; but still I believe that an easier method of classification cannot be adopted.

The lower extremities are much more subject to ulceration than any other parts of the body; and this results in part from their greater distance from the action of the heart, and also from their liability to retardation in the natural circulation of blood through the veins; from which cause also we find it frequently so difficult to heal ulcers on those portions of the body.

An ulcer is termed healthy (if such a term may be admitted) when it is filled up by small distinct red granulations, equal in size, and presenting elevated pointed apices, which are bedewed, rather than covered, by pure pus. If the pus, however, be rubbed off, the surface of the granulations will not be exposed, but will be found to be covered with a thin layer of plasma, not yet become vascular, and this may be demonstrated by applying a little alcohol to the surface after the pus has been removed: the alcohol immediately coagulates the plasma, renders it opaque, and conceals from view the vascularity of the granulations, which was before perfectly apparent.

Such a granulating sore usually requires but little assistance from the science of surgery to insure its healing: rest only is necessary, with due attention to the natural secretions of the patient.

Should there be an indisposition in the sore to cicatrize, it will often be found very useful to give gentle support to the granulations; for it is to be borne in mind that newly-formed granulations are not endowed with the same power as originally-formed parts; and therefore they should be carefully protected from external injury; at the

same time, benefit is frequently derived from pressing the edges of the ulcer towards each other, which not only tends to diminish the extent of surface to be filled up by the granulations, but also prevents their being constantly dragged upon and separated from each other by the elasticity of the skin.

Although the description of sore just described as a healthy ulcer principally belongs to those kinds which are termed local, it may also have originally commenced from a constitutional or even a specific cause; for, if remedies be given which improve the health of the patient, or destroy the specific action, any kind of sore may then put on the character of a healthy wound, into which it has, in fact, become converted by the altered state of the constitution.

So, on the other hand, an ulcer which has been for a length of time healthy, may suddenly put on a most unhealthy character, from some constitutional deterioration. The fact you may frequently observe, gentlemen, in this hospital, and it more frequently occurs in patients who have come up from the country, and who get out of health from the confinement and comparatively impure air of London.

One of the most frequent changes ulcers undergo is readily distinguished by the elevation of the granulations above the level of the surface of the skin, resulting from an exuberant growth of the granulations, and producing that appearance which in common language is termed "proud flesh."

In such cases pressure is indicated, which is best effected by the application of bandages; but, should such means not succeed, escharotics may be required to keep down the tendency to hypertrophy. Sulphate of copper I consider the best application for this purpose. Nitrate of silver, which is very frequently employed, tends, in my opinion, rather to increase their growth; for although, when first applied, it removes them, yet they appear to return with increased vigour after its escharotic influence has ceased. A low diet is also generally indicated when the granulations shew this disposition to hypertrophy. It is quite essential that the granulations should be brought down to a level with the skin, or cicatrization cannot take place, as the capillaries of the skin are prevented from inosculating with those of the granulations. These exuberant granulations do not necessarily indicate local vigour or constitutional power in the patient: they appear rather to arise from a want of ability in the skin to cicatrize over them, and thus naturally check their growth. They indeed frequently occur in debilitated persons, and are perhaps most conspicuous in those ulcers which are kept open for the discharge of carious bone, where, for obvious reasons, cicatrization

does not occur, and therefore granulation goes on to exuberance. The cure of these ulcers, under such circumstances, is of course the removal of the mechanical irritant.

Indolent ulcers, whether arising from an external cause or from constitutional derangement, are characterised by their granulations being broad, pale, and flabby, instead of small, red, and firm, as in a healthy condition of sore. This state shews that the granulations are too weak to supply organisable plasma, or, in other words, to heal. It becomes, therefore, necessary to ascertain whether this defect originates locally or constitutionally, and to treat it accordingly. It will usually be found that such remedies are required as should influence both the general powers of the patient, and act upon the ulcer itself; for, whether the constitution or tissue were first affected, no diseased action can be maintained for any length of time in either, without a reciprocal action being established; and, therefore, both require treatment.

In such cases bark and acids are indicated, having taken care first that the bowels are freely opened and the secretions generally natural. Stimulants should be applied to the ulcer, either the Ung. Nitrici Oxidi, or the Ung. Zinci; or, should lotions be preferred,—and, indeed, in some cases they seem more suitable than greasy applications,—nitric-acid lotion, or zinc and lead in solution, may be substituted; but, at the same time, the patient should be kept during a large portion of the day in a recumbent posture, and much benefit is sometimes derived from the elevation of the affected limb. Porter and generous diet will also expedite the cure, by exciting the reparative process. The pressure and support of a bandage is occasionally useful, but in languid or indolent ulcers its utility is doubtful; for I have frequently observed that a tendency to slough follows its application, as if the granulations were too tender to sustain the slightest pressure.

When these ulcers prove very stubborn, and resist all the constitutional and topical remedies, I have lately witnessed the best results from stimulating their surface, by subjecting it to a stream of negative electricity by a method I shall describe, and which was recommended by my colleague Dr. Golding Bird, who is constantly so happily applying his general philosophical knowledge to the improvement of medical science.

At a convenient distance from the indolent ulcer (not less than five or six inches) a portion of cuticle is raised from the cutis by the application of a piece of Emplast. Lyttæ of the size of a half-crown. The cuticle is detached by a pair of scissors, and on the exposed cutis a piece of zinc foil is placed, of

the same size as the denuded spot. A plate of silver-foil is laid on the original ulcer, and the two plates connected by means of a thin copper wire. The size of the silver plate is immaterial. Both zinc and silver are now covered with pieces of moistened lint and oil-skin, and the apparatus, as recommended by Dr. Bird, is complete. In a few hours the surface beneath the zinc becomes white, and a slough begins to form, which in a short time is thrown off, leaving a healthy ulcer behind. In the meanwhile a great change has taken place in the original ulcer: it has thrown aside its indolence; the granulations are sprouting and contracting; new skin is forming at the margin, and the whole surface looks healthy and animated. The rationale of the action of this contrivance is simple enough. There occurs a decomposition of the water and chloride of sodium naturally existing in the blood and tissues; the result of this is the formation of soda (oxide of sodium) and the evolution of hydrogen and chlorine. The former escapes at the silver plate, while the latter unites with the zinc to form chloride of zinc, which produces the above speedy escharotic effect.*

A COURSE OF
LECTURES ON DENTAL PHYSIOLOGY AND SURGERY,

Delivered at the Middlesex Hospital School,
By JOHN TOMES, Esq.
Surgeon-Dentist to the Hospital.

LECTURE XIV.

ABNORMAL CONDITIONS OF THE ALVEOLI.

—Necrosis—Alveolar exostosis—Absorption of the alveoli.

DISEASES OF THE GUMS.—*Inflammation, acute and chronic, of the gums—Ulceration of the gums—Tumors of the gums—Erythema—Polypus—Vascular tumors of the gums—Blue gum—Salivary calculi, or tartar.*

ABNORMAL CONDITIONS OF THE ALVEOLI.

I SHALL pass over the symptoms and treatment of those diseases of the jaw which are common to all bones, because they are treated of in your surgical lectures. Those abnormal conditions, however, which occur in connection with, and exercise an influence on the teeth, I shall notice so far as the treatment affects the teeth.

Necrosis of the alveoli.—Death of a portion of the alveolar arch is far from uncommon. The greater part of the jaw may be involved in the disease, or may be confined to the socket of a single tooth, or even a portion of the socket. It may occur at any period of life, and to either jaw, but is more frequent in the under jaw. Sometimes we

find necrosis of the alveoli in quite young children. Two or three of the sockets of the temporary teeth are lost, including also the cells containing the partially developed permanent teeth. Again, we find the same disease in old people, affecting perhaps the sockets of their few remaining teeth. An old man of sixty, recently in attendance at the hospital, lost the central incisors, with their alveoli, by necrosis; and these were the last of his teeth.

The symptoms of necrosis of the alveoli are similar to those indicative of the same disease occurring in any other bone, and the treatment must also be similar. Mechanical injuries of the jaw are frequently productive of necrosis. The extraction of diseased teeth unskilfully performed is a frequent cause of death of a small portion of the jaw; and this catastrophe may, and sometimes does, follow the drawing of a tooth, however dexterously managed. In the great majority of cases, however, diseased teeth play an important part in the production of the disease, and have therefore to be considered in the treatment.

The dental pulp becomes exposed by caries or injury of the crown, inflames, and the inflammation extends to the dento-alveolar periosteum, and from thence to the jaw, and thus produces necrosis.

The teeth situated over the dead bone loosen and drop out, or much more frequently are removed by the surgeon. There can be no doubt of the propriety of removing the tooth that has occasioned the disease, but it becomes a question whether sound teeth loosened in necrosis should be at once removed. In the following case, read at the Medico-Chirurgical Society, by Mr. Sharp, the teeth were loosened by necrosis of the jaw, but afterwards became quite firm and useful, and, as it would seem, by the formation of new alveoli. The sequestrum was exhibited, and figured for the Transactions. I have since had an opportunity of examining the sequestrum, and my friend Mr. De Morgan has been kind enough on this, as on many previous occasions, to make a drawing of the specimen a little more favourable for showing the alveoli than that contained in the Transactions. The case was reported as follows:—

“Esther Watson, aged 20, consulted me, on the 8th of September, 1842, for an extensive necrosis of the lower jaw, with ulceration of the integuments under the chin. The mouth and lower part of the face, from the tumefaction, the ulcers, and the foetid discharge, presented a very disagreeable appearance. It had commenced with toothache about six months before, the pain being followed by an inflamed swelling, the swelling by abscess, and the abscess by ulceration. No effectual treatment had been adopted to arrest the progress of a very painful disease.

* Ulcers continued in next lecture.

"It immediately occurred to me that a fungus arising out of the fang of the decaying tooth had been the origin of the mischief; and my first object was to remove this by extracting the tooth. The posterior bicuspid of the left side of the lower jaw was accordingly drawn, and a small fungous growth was found attached to one of its fangs. On examining the jaw with a probe through the ulcerated openings, a large extent of denuded bone was felt, but it appeared to be firmly attached. My further attempts were therefore limited to prescribing an alum gargle to be freely used to cleanse the mouth, and zinc ointment to be applied externally.

"By these means the *comfort* of the patient was greatly promoted, and time was allowed for the process of separation to advance: they were continued, with the occa-

sional application of a poultice, for three months.

"On the 13th of December, it being evident that the dead bone was completely detached from the living, the existing openings under the chin were thrown into one, and somewhat enlarged by two small incisions. The bone was taken hold of by a pair of forceps, and immediately, without pain or hæmorrhage, extracted. The portion removed amounted to about two-thirds of the entire lower jaw, and contained several of the alveolar processes, as may be seen in the annexed woodcut, which represents the sequestrum viewed from above and anteriorly.—*a, a.* Socket of the bicuspid teeth, with a portion of the socket of the left canine to the symphysis.

"A slight dressing was applied to the

FIG. 46.



wound, and, on desiring the patient to open her mouth, to my very agreeable surprise I found the entire set of excellent teeth (with the single exception of the one I had extracted) perfectly fast, and in their proper places.

"On the 5th of January, 1843, (in three weeks) the wound was very nearly healed, and the face had now recovered a perfectly natural appearance, having lost the swelling and inflammation which had disfigured it for so many months. She then returned into the country, and, as far as I have been able to learn, has since continued quite well."—*Medico-Chirurgical Transactions*, vol. xxvii. p. 432.

I am not aware that a similar case has been since reported. We have, however, had an out-patient admitted under Mr. De Morgan, whose case, so far as it was seen, followed very closely to that described by Mr. Sharp. The patient was an Irish woman of about five-and-thirty. She stated that she was attacked with violent tooth-ache, at first confined to one tooth, that the pain afterwards extended to the jaws, and that the jaw became swollen. When she came to the hospital there was considerable thickening of the front and right side of the lower jaw, with three fistulous openings in the gum, through which dead bone could be

felt. The sequestrum, which was not detached, seemed to extend from the front to the side of the jaw as far back as the second molar, over which part the teeth were sound, but very loose. Pressure on the teeth produced pain; but when moved about, the fangs did not grate upon denuded bone. General and local treatment was adopted for subduing the inflammation, and the loose teeth were allowed to remain. At the end of a fortnight the pain and inflammation had subsided, and the teeth had become more firm. Two months afterwards the teeth had become comparatively firm, and the swelling about the jaw had greatly subsided, but the dead had not completely separated from the living bone. The woman now thought very lightly of her malady, and could not be persuaded that there was any disease left worth her attention; and from that time she has been lost sight of.

Then, as regards teeth loosened by necrosis of the jaw and alveoli, it will be well to let them remain if they are sound, and are not, so far as we can tell, stripped of their periosteum, and do not occasion irritation. Much will be gained if they are by nature refixed in new sockets; and though the probabilities are greatly against the occurrence of this event, yet we need risk nothing in taking what chance there may be.

Wherever there is fibrous tissue there may be formation of bone; and it is possible that, if the dento-alveolar periosteum escapes destruction, it may contribute to form new alveoli.

Alveolar exostosis.—After a tooth has been pulled out, the vacated socket is gradually filled up from the bottom by bone. This growth of bone in the socket sometimes takes place without the previous removal of the tooth, and thus gradually forces the tooth out of its natural position, or out of the jaw. This happens more commonly to the central incisors of the upper jaw than to any other teeth.

You may sometimes see people in whom one front tooth looks longer than its fellow, the one having been protruded by exostosis in the socket. In other cases, again, the teeth are forced apart by thickening of that portion of the alveolus that passes between them, or, they may be pressed outwards or inwards by osseous thickening of the outer or inner wall of the socket. The fangs of the displaced teeth are sometimes also shortened by absorption.

The disease will have its way in spite of treatment: hence in most cases treatment is but an addition of evil to that consequent on the malady. Eventually the tooth is forced out, or becomes so much displaced, or discoloured from exposure of the fang, that its removal is necessitated.

Absorption of the alveoli.—In advanced age the alveoli become absorbed, and the teeth, however sound in themselves, fall out. The process commences on the edge, and gradually advances towards the jaw, till the whole of the sockets are removed. This, which is a natural occurrence in the old, constitutes a disease when it happens to the young or middle-aged, and produces premature age in the jaws. Frequent or long-continued salivation, scurvy, purpura, are a few of the many constitutional conditions that lead, directly or indirectly, by producing increased vascularity of the gums, to premature absorption of the alveoli; while the use of a very hard tooth-brush, the accumulation of tartar ligatures, whether of silk or metal, round the necks of the teeth and in contact with the gums, by inducing irritation in the edge of the gums, lead to a like result.

In cases arising from any of these conditions, the disease may be arrested by removing the cause, and afterwards employing astringents to the gum.

Premature alveolar absorption sometimes, however, occurs without any accompanying disease of the gums, teeth, or periosteum, and in such case is not favourably influenced by treatment. This form you will find running through the various members of a family, and descending from father to son. The sockets of many or only a few teeth

may waste away, while others remain unaffected; those of the front teeth being most frequently absorbed.

The patient should be enjoined to scrupulously avoid any sources of irritation of the gum, and to use a very soft tooth-brush, and to prevent the accumulation of tartar on the necks of the teeth.

DISEASES OF THE GUMS.

Acute inflammation of the gums.—This disease is of rather rare occurrence, except as the consequence of specific agents administered for the cure of disease.

There are, however, a few cases on record of spontaneous salivation, in which the gums have been highly inflamed. I saw, a few months since, a case in which the gums of the upper jaw, and especially of the anterior part of the jaw, had become highly inflamed without any assignable cause; the pain in the mouth was great, and the flow of saliva excessive; the disease yielded to free scarification, astringents, and occasional aperients.

In salivation produced by mercury, the effect is first discernible upon the gums. Some hours previous to the coming of the metallic taste, and to the foetor of the breath, and also to the soreness and discomfort which mark the influence of mercury on the system, the gums show indications that these conditions are about to appear—in fact, that the patient will in a few hours be salivated. The state of gum I am about to describe is, in fact, a premonitory sign of ptyalism, for should it appear, and the mercury be immediately discontinued, yet salivation will come on. The sign is this:—the adherent portion of the mucous membrane of the gums assumes an opaque white colour, contrasting strongly with the non-adherent portion, which preserves its natural hue or becomes more red. The free edge of the gums is moveable, but that part which lies over the edge of the alveoli is firmly tied down to the periosteum; and as the edges of the alveoli present a festooned line, so the whitened mucous membrane presents in a corresponding festooned line. Again, where the mucous membrane is loosely reflected from the gum to the cheek, the natural colour is preserved. The whiteness of gum is produced by an increased secretion of epithelium, which from being thicker and more opaque renders the colour given by the vessels to the subjacent tissue less apparent.

The surface of the mucous membrane when deprived of epithelium is studded over with innumerable small conical elevations, or papillæ. The thickened epithelium is readily rubbed off the tops of the papillæ, while it retains its full thickness in the hollows between them; thence, if closely inspected, the gums will not be seen to present a uniform white hue, but a mottled aspect;

and this because the epithelium is thin over the papillæ and thick between them, and therefore more colour will show through at one part than at another.

With the increased thickness there is a decrease of tenacity between the scales that form the epithelium, for the surface may be much more readily rubbed off than when in its natural state.

This curious and useful premonitory sign of coming pyalism was, I believe, first noticed, and its value pointed out, by Mr. Corfe; at all events, he first of all drew my attention to the fact, and I am not aware that it has been described by any author. Since, however, Mr. Corfe mentioned the result of his observations as to the constancy of the sign, I have verified for myself its presence in all cases of salivation that have come under my notice, and from these I have written the foregoing account.

If you would make use of this indication in your practice, it will be necessary that you should carefully note the state of the gums at the time the mercurial treatment is commenced, for it is quite possible that other agents may produce a similar state of gum, and that such may exist previous to the exhibition of mercury.

Chronic inflammation of the gums.—This form of disease is very common in the middle and later periods of life, and when once established is apt to prove obstinate.

The surface of the gums becomes minutely modulated, and the secretion of epithelium increased; the papillæ are increased in prominence, while the substance of the gum is generally thickened, and the edges about the teeth thick and round. The disease may be confined to the gum, about two or three teeth, or may extend over the whole mouth; the extent depending upon whether the cause be local or general.

The amount of pain consequent on this malady is subject to considerable variety, both in degree and character. In some cases but little uneasiness is complained of unless when eating, while in others the mouth is seldom free from pain. Then, again, in others it comes and goes irregularly, or, sometimes, regularly; the pain may come on every evening towards bedtime, and last for several hours. In any case the severity is usually increased in damp weather.

Chronic inflammation of the gums, if allowed to pursue its own course, may lead to one of two very opposite results; the alveoli may become absorbed, or they may become thickened and spongy. In either case the teeth eventually are loosened, from the diseased state of the gums spreading to the dental periosteum.

This form of disorder is very commonly the result of indigestion, when general; when confined to part of the mouth it follows pre-

existing disease of the dental periosteum, of stumps, or diseased teeth.

Treatment.—The cause should be removed—the affected gum should be from time to time lightly scarified with a sharp lancet, much in the manner that granular conjunctiva is scarified; astringents should be frequently applied, and of these tannin is the best: this powder should be rubbed with the finger twice or thrice a day over the affected part. Teeth that have been loosened by inflammation of the gums end to keep up the disease by their mobility; the patient may not, however, consent to their removal, especially if the front teeth are the ones implicated. In this kind of case I have seen great benefit follow the use of compound spirits of horse-radish, and also spirits of scurvy-grass; they should be applied to the affected gum, three or four times a day, with a bit of soft sponge.

There is a singular modification of chronic inflammation of the gums, in which the gum, instead of thickening and becoming irregular on the surface, seems rather to decrease in size, assumes a very smooth and polished surface and mottled aspect; the disease often extends over the surface of the hard palate, and is attended with acute intermittent pain; the pain may be confined to one side of the mouth, or even to half of the upper jaw; it very commonly comes on in the evening, and keeps the patient awake half the night. The cases of this complaint that have come under my notice have been confined to poor middle-aged females, in whom menstruation was becoming irregular, or had altogether ceased; and they have always been cured by the regular use of mild aperients. I have usually given a small dose of sulphate and carbonate of magnesia twice a day, and at the end of a week or nine days the pain in the gums has ceased, and that structure has assumed its healthy appearance.

Ulceration of the gums.—The gums are frequently the seat of ulceration: a small, round, excavated ulcer appears, of a yellowish-white colour, very painful when touched, and hence troublesome. It may occur in any part of the gums, but when it is situated between the teeth its existence is not readily recognized: hence patients have had sound teeth removed to relieve pain which was, in fact, not in the tooth, but in the interdental gum. Ulcers of this kind not uncommonly make their appearance on tumors of the gum, in situations where they cannot be seen, and so give much trouble.

There is one unfailing and almost instantaneous remedy—this is, nitric acid; the ulcer should be touched with the acid diluted with an equal part of water; a camel's hair pencil is the best instrument for applying the remedy.

I told you in a previous lecture that poly- pus of the pulp sometimes attains a con-

iderable size, spreads over the edges of the fang from which it has sprung, and unites with the surrounding gum, thus burying the stump in the new tissue. When in this state, spreading ulceration sometimes attacks the surface of the new texture, and would destroy it but that it is constantly growing at the base, and thus affords material for the ulcerative process to continue. I have seen one case of this nature, in which the surface of the ulcer looked like malignant disease; the surrounding parts had not, however, the induration peculiar to that frightful malady. The stump was felt with a sharp steel probe, and removed, and then the gum speedily returned to a healthy state.

Tumors of the gums.—Tumors occasionally grow up in the gums, having originated in the vessels or vascular canals of the bone, in the periosteum, or in the substance of the gum itself.

When arising from either of the former tissues, the tumor is termed *epulis*; while those springing from the gum itself, being similar in structure to the gum, are usually called *polypus*, or *granulation* of the gum.

Epulis.—This species of tumor, itself fibrous, is developed in the fibrous tissue about the bone, from which it continues to grow, and presses before it the tissues of the gum; hence in external appearance it resembles in colour, and generally in surface, the gum; or the surface may be rough, and then it looks like a wart on the gum. The growth is generally slow, but gradually progressive, and usually unattended with pain, and the tumor, although tolerably vascular, is not prone to bleed.

The surface of the bone on which the tumor rests becomes more or less affected, the degree being proportionate to the duration and magnitude of the tumor. The Haversian canals in this part become much dilated, and they contain portions of the tumor; for should it be excised down to the surface of the bone, but the canals left, the tumor speedily reappears; while if the affected bone be also excised the disease does not reappear.

Osseous tissue may be increased in quantity by a diminution in the calibre of the Haversian canals, or by an addition to the surface; or it may be diminished in quantity by the dilatations of the Haversian canals, or it may die, but in neither case does the tissue itself undergo any change; it is but a matter of *more or less*. Hence when epulis seems to grow from, or out of, the bone, it does not belong to the osseous tissue, but to the contents of the Haversian canals that traverse that tissue.

Osseous spicule not uncommonly shoot from the surface of the jaw into the tumor, and in some cases isolated nodules of bone are found in its substance; in the latter fea-

ture epulis strongly resembles fibrous tumors of the uterus.

Epulis is strictly a fibro-cellular tumor, composed of interlacing fibres, mingled with nucleated cells, in every stage of advancement towards the formation of fibres. This disease may form in any part of the gums, but it most commonly springs up in that part which passes between the teeth.

Your patients will tell you that they first of all found a small lump on the gum, but that it gave no pain, and hence, for a while, did not engage the attention. As it increased in size, however, the teeth at its base loosened, were separated from each other, and got out of place. As the growth advances, the tumor becomes softer, more vascular, is indented by the teeth, and subject to ulceration, in which case it also becomes painful; sometimes it will assume very much the appearance of malignant disease. If a tumor of this nature be left to itself, it may gradually attain a considerable size, and lead to great displacement of neighbouring parts, and disfiguration of the face.

When the disease has become formidable from its size or character, the treatment falls to the province of the operative surgeon; and to surgical writers I must refer you for a more detailed account of the disease and its treatment, but I would especially recommend your perusal of a clinical lecture on the subject, by Mr. Caesar Hawkins, published in the *MEDICAL GAZETTE* about eighteen months since.

Whatever be the extent of the tumor, extirpation and subsequent excision, or destruction by escharotics, of the surface of the bone from the canals of which it has grown, is the only sure manner of removing this otherwise obstinate disease.

Polypus, or fungus, of the gum.—This disease is essentially hypertrophy of the gum, arising from mechanical irritation. If a tooth decay away on one side to below the level of the gum, leaving a sharp margin in contact with the gum, a tumor frequently forms from the gum, spreads into, and partially fills up, the hole in the tooth, or the vacancy between the two decaying teeth. The tumor is usually composed of dense fibrous tissue, covered with epithelium; is almost insensible, unless ulcerated, when it becomes very painful. If the tumor be removed it will grow again and again, unless the bad tooth is removed, and then it will speedily disappear. These tumors show on section an undulating surfaced fibro-cellular tissue, covered by a thick layer of epithelium.

Caries sometimes attacks that surface of a tooth which lies in contact with a neighbouring tooth, in which case, before an instrument can be introduced to excise the softened dentine, a portion of the tooth must

be cut away; and it is sometimes necessary, before the operation of plugging, is completed, to cut away portions of the tooth as low down as where the gum becomes attached. This operation is sometimes followed by irritation and slight polypus of gum. The new growth is highly sensible to pressure, and if food is forced by mastication on such a part, pain resembling toothache is felt. A small ulcer will sometimes form in this situation, and the pain simulate toothache so closely, that the patient desires that the tooth may be drawn; and I have seen teeth removed in such cases.* The best application for the relief of this troublesome state of the gum is sulphate of copper applied every day or two. I have found a little powder, introduced on a quill and dropped on the part, is the most convenient mode of application; the relief is often instantaneous. The remedy should be applied some little time after the gum has ceased to give trouble. Other escharotics would no doubt answer equally well. If a sharp edge of tooth, or of projecting stopping, produce the irritation, no local application will be useful until these sources of mischief are removed by the file or otherwise. A similar state of gum is sometimes produced by the presence of a jagged piece of tartar, in which case the disease subsides with the removal of the cause.

Vascular tumors of the gums.—The gums are occasionally the seat of vascular tumors closely resembling in physical characters ordinary *nævus*. I have met with two cases of this disease: one of these I will describe. A female patient, of about 25 years of age, stated that some time past she observed a small red pimple between the front teeth of the upper jaw, which bled every time she cleaned her teeth; that it gradually grew and spread on the surface of the gum, both in front and behind the teeth, and that with its increase of bulk the front teeth had separated and loosened; and that at times she suffered a good deal of pain in and about the tumor, which had become tender on pressure and very liable to bleed.

When the patient first came to me, the central teeth were separated about the eighth of an inch, were loose, and very tender. The tumor occupied the interval, and reached half way down towards the edges, and had spread itself over the gum immediately in front of the teeth for about half an inch, and covered a similar space on the palate behind the teeth. It was of a bright scarlet colour, and soft in texture, and could by steady uniform pressure be deprived of colour, and reduced to the level of the surrounding gum, but immediately sprung up by refilling of the vessels, or the removal of the pressure. The pain in the tumor was very irregular, both in severity and continuance; some days she scarcely felt it,

while on others she had few moments of ease; pressure, however, even with the tongue, was at all times attended with, and followed by pain; the tendency to bleed, too, had been, and still was, a source of great alarm to the patient.

The patient was directed to apply tannin in powder to the surface of the diseased part every three hours. With this treatment the tumor became gradually diminished in size, became less vascular, and finally altogether disappeared.

The second case was similar to the one now narrated, and yielded to similar treatment.

I do not recollect to have seen a description of this disease; neither have I seen any other cases than the two now mentioned.

Blue gum.—Dr. Watson, in his lectures, when treating on *colica pictonum*, says—“Very recently a most curious symptom, pathognomonic, I believe, of the presence of lead in the system, has been pointed out by Dr. Burton; and, now that it has been pointed out, one can hardly understand how it escaped us so long. It is a blue or purplish line running along the edges of the gums just where they meet the teeth.”* A paper on this subject, by Dr. Burton, was read at the Medical and Surgical Society, in January 1840.

It is not my purpose to say anything on the general effects of lead on the system; but I shall take this opportunity of relating to you a few observations on blue gum induced by lead, and the conditions necessary to its production. My position at the hospital has enabled me to make many inquiries into this curious phenomenon, which would naturally escape the observation of those whose vocation does not lead them to inspect in large numbers the teeth and gums of healthy subjects.

It has been observed that the presence of teeth is necessary to colouring of the gum. This is not all, however: the necks of the teeth must be encrusted with tartar, otherwise the edge of the gums will not receive the blue tinge: in fact, the teeth are necessary only as affording lodgment for the tartar. I conceive, that, if tartar were held in constant contact with the edge of the gums by any other means than its lodgment on teeth, the gums would be equally tinged. I have frequently seen that gums about teeth encrusted with tartar were very blue, and in the same mouth the gums about teeth free from tartar, perfectly natural in colour.

The colouring of the gum may be the sole indication of lead in the system. I not unfrequently find among my patients those whose gums are blue, but who declare that they have never suffered from colic or any other effect of lead; and, indeed, a few of

* Dr. Watson's Lectures on the Practice of Physic.

these say they have not, to the best of their knowledge, been exposed to lead.

A short time since, a gentleman applied to me to remove a troublesome tooth. I found the necks of the teeth encrusted with tartar, and the edges of the gums intensely blue. He stated, on inquiry, that he had just returned from China, and that during the voyage he had been salivated for syphilis, but that he had not, so far as he knew, been exposed to the action of lead, either by inhalation or any other mode.

The continuance of tartar on the teeth is necessary to the continuance of blue gum. If the whole of the tartar be removed from the neck of the tooth, the blue tinge on the gum will gradually fade, while its intensity will be preserved about the teeth on which the tartar is allowed to remain. I cannot tell you how long it will be before the colour will be wholly gone, when the tooth is allowed to remain, because the tartar may reaccumulate, and thus defeat an experiment for that purpose. When the tooth is removed, however, the blue stain disappears in two or three weeks, as the following case would indicate:—I was called to remove an aching tooth for a lady who had taken two or three doses of acetate of lead for the suppression of uterine hæmorrhage. The gums exhibited the characteristic blue line. Nine days after the extraction of the tooth, the gums had come together, and the union was marked by a transverse blue line. At the expiration of three weeks the blue line had wholly disappeared.

In another well-marked case of blue gum the patient had nothing to do with lead in any way, and had not been in the neighbourhood of recently-applied paint; but he was employed silvering mirrors, in which mercury and tin are the metals used.

These are not solitary instances in which I have found strongly-marked blue gum, and yet no other indication of the presence of lead in the system, or of the exposure of the patient to the action of lead. Hence I am forced to suspect that other metals may produce a similar discolouration of the gum. Should future investigation prove this suspicion to be well founded, the diagnostic value of this state of gum in relation to lead will be diminished.

In endeavouring to trace by what process the gums are stained blue, it must be borne in mind that the tartar itself is often similarly discoloured, especially where it is in contact with the gum. The colouring material is probably sulphuret of lead, or a similar salt of some other metal. Tartar, being very porous, admits into its substance fluids charged with animal matter, which may there be decomposed, and furnish sulphuretted hydrogen, as a common product of decomposition of an adjoining part, a sulphuret position. Supposing a salt of lead to be present

of lead would be formed, [which would give the colour in question to the tissue in which the formation took place. This action would be continuous so long as the metal remained in the system, and the tartar remained to afford a site for decomposition, and to hold the products against the gum.

The saliva itself contains sulpho-cyanic acid, and from this source sulphur might also be furnished.

Traces of lead may be found in the tartar of those affected by the metal.

Tartar a salivary calculus.—The saliva, together with oral and pulmonary mucus, hold in solution various salts, which are precipitated in a greater or less quantity on natural or artificial teeth in those situations where the solvent fluids remain at rest. Epithelial scales, and other extraneous matters, that may be floating in the oral fluids, or entangled between the teeth, become impacted in the precipitated salts, and thus contribute to form the concretion usually called *tartar*. And, in addition to these, infusorial animalcules are met with in recent tartar, and their remains in that which has been dried.

Simon says, "Tartar on the human teeth consists of earthy phosphates, epithelium-scales, a little ptyalin, and fat; and when examined under the microscope there are seen abundance of pavement epithelium and mucus-corpuscles: and in addition to these, numerous long acicular bodies and infusoria of the genera vibrio and monas."

According to Berzelius, tartar is composed of—

Earthy phosphates	79.0
Salivary mucus	12.5
Ptyalin	1.0
Animal matter soluble in hydrochloric acid	7.5*

Dr. Wright gives the following as the constituents of healthy saliva:—

Water	988.1
Ptyalin	1.8
Fatty acid	.5
Chlorides of sodium and potassium	1.4
Albumen with soda	.9
Phosphate of lime	.6
Albuminate of soda	.8
Lactates of potash and soda	.7
Sulphocyanide of potassium	.9
Soda	.5
Mucus with ptyalin	2.6

Berzelius gives the following as the constituents of nasal mucus, to which the bronchial mucus is very similar:—

Water	933.7
Mucin	53.3
Alcohol-extract and alkaline lactates	3.0

* Simon's Animal Chemistry, translated by Dr. Day.

Chlorides of sodium and potassium	5.6
Water-extract, with traces of albumen and phosphates . .	3.5
Soda combined with mucus . .	3.9

Tartar has been described by dentists as consisting of several different kinds, and named from the variation of colour and density it presents. Thus, one sort is called black, another green, a third yellow tartar. The division is not, however, so far as I know, based upon any chemical difference, and may therefore be disregarded. I conceive that in most instances these physical variations are traceable to the time occupied in the formation or to the habits of the individual.

Thus, when the tartar collects quickly, it is usually soft and yellow; and, on the other hand, when the process is slow, it is dark and hard. Then, again, in those who smoke much, the tartar is of a deep brown or black colour. In teeth where one fang has been necrosed, and stripped of perios-teum, the surface of the dead fang is often studded with nodules of very hard greenish tartar. This tartar, during the time of its deposition, has been bathed in pus secreted from the lining membrane of the socket. The tartar is not an active corrosive agent, producing the destruction of the fang, as some dentists have supposed, but is consequent on its death and denudation.

We commonly find the concretion the most abundant about the posterior surfaces of the front teeth of the lower jaw, or about the buccal surface of the molars of the upper jaw, if from any cause those teeth are not used in mastication.

If a vertical section of a piece of tartar, carefully removed, be made, it will be found to present an inclined plane, the base of which lies in contact with the gum. The surface towards the tongue, or cheek, is usually smooth, but that against the gum is rough; and it is to that additions are mostly made. The gums become irritated and inflamed from the contact of the rough surface of the tartar; the alveoli become absorbed, and the gum recedes, making way for the further accumulation of the salivary salts. To the dental tissues themselves the tartar does no direct injury, but its effect upon the gums and alveoli is destructive, and hence indirectly upon the teeth.

Careful daily brushing will do much to prevent the accumulation of tartar on the teeth, but should it accumulate it must be removed from time to time by instruments fitted for the purpose.

Tooth powder that will dissolve the tartar will also dissolve the teeth, and therefore may not be used.

Original Communications.

ON MORBID SYMPATHIES;

OR THOSE ASSOCIATED STATES OF DIS-
ORDER WHICH MOST FREQUENTLY
PRESENT THEMSELVES TO
THE PHYSICIAN.

*Being the Croonian Lectures delivered at
the Royal College of Physicians in
March and April, 1846.*

BY JAMES COPLAND, M.D. F.R.S. &c.

[Continued from p. 544.]

THE irritability of the heart is very remarkable. I have had the opportunity of seeing it exemplified in the hearts of a number of animals, and in several fishes,—the halibut, the skate, the turbot, the cod, ling, &c. From all these the heart may be cut out, and it will still contract for a short time after it has been separated from all nervous and vascular connections; thus showing, that not only does it take a considerable time for the influence of the ganglionic nerves supplying an involuntary organ to be exhausted, but that the numerous plexuses, small ganglia, formed by these soft nerves under the serous linings and in the structure of the heart itself, and in the vicinity of blood-vessels, still continue to supply nervous power to the muscular structure, and are of themselves sufficient for the continuance of the phenomena of irritability for a short time. Moreover, the heart appears to be plentifully supplied in its structure with those ganglionic corpuscles, which, as I have already stated, are intimately and organically connected with the soft, grey, or ganglionic nerves; and which most probably also administer to its irritability. Owing to these provisions a short period is required to exhaust the irritability of the organ, even when thus isolated or removed from all its connections. It is not surprising, therefore, when viewing the morbid relations of irritability, to find this vital property most remarkably modified—to observe it exalted in one case, and depressed in another, or even otherwise altered in its condition, by agents

which impress the organic nervous system, by changes in the vascular system, especially by alterations of the blood, and by the state of the cerebro-spinal nervous influence.

But it is not in connection with *irritability* only that the functions of the ganglial and sympathetic nervous system should be viewed. This part of the nervous system, or, more correctly, this distinct and separate system—this organic or primary nervous system—presides also over secretion and excretion, as I have already stated. If we view the digestive canal, which possesses both the vital property of irritability, and the no less vital property of secretion—the former in connection with its muscular tunics, the latter in connection with its villous coat and glandular apparatus—we shall find that every part of this canal, more especially the stomach, duodenum, &c. is supplied with soft or splanchnic nerves; and that this supply is not limited only to those fibrils which surround the arteries of these viscera, or to others which proceed from the semilunar ganglion and aortic plexus; but that these viscera, as well as other secreting viscera, possess, in addition, numerous minute ganglia and plexuses under their serous and proper coverings, and near to the situations of the principal blood-vessels, which minute ganglia and plexuses are more especially devoted to the functions discharged by the organ or part in which they are situated.

Whether the splanchnic or ganglial nerves originate in these corpuscles distributed through an organ or membrane, and successively form themselves first into fibrils, next into plexuses and minute ganglia, and afterwards into larger branches and more manifest plexuses and ganglia, until they converge into the semilunar and other ganglia; or whether they originate, as believed heretofore, in the ganglia themselves, and depart thence to their destinations in the tissues, may not be readily decided; but it is indisputable that they constitute a distinct system, that they send their fibrils with the blood-vessels, and with the spinal nerves, to all parts of the body, especially to secreting organs and parts; that they supply both the brain and spinal cord; and that they form more numerous plexuses and minute ganglia

in the several viscera, than have hitherto been described or even supposed; whilst, on the other hand, the intimate connection existing between these nerves and the cerebro-spinal nerves is reciprocated by numerous ramifications proceeding from the spinal nerves,—from the intercostal, lumbar, &c.,—which run to the ganglia and plexuses of the organic nerves, and either proceed through these, or terminate in them, or accompany fibrils from them to various parts, retaining more or less evidently their white and tubular appearance. In viscera possessing more or less of voluntary power in addition to the organic, as the urinary and sexual organs, the vicinities of the sphincters, and the outlets of canals, &c., the supply of the white and tubular nerves—motor and sensory spinal nerves—to the ganglia and plexuses more especially devoted to the functions of these organs and parts, is more abundant and more manifest, these organs combining and requiring the influence of both these nervous systems in the discharge of their functions.

Having thus directed your attention to those preliminary topics which it is of importance should be duly recognised before we proceed to inquire into the several media by which one organ or part sympathises with another, or by which the morbid condition of one organ affects another, I now proceed to a general view of the *media and modes of morbid sympathy*,* for there are not only different *media*, but to a certain extent different *modes*, by which these sympathies take place.

Associated morbid states or sympathies may be *classed* into—1st, the *direct*; 2d, the *indirect*; and 3d, the *reflected*. The *first class* has for its media,—*firstly*, the *direct communication of nervous fibres*, more particularly the organic nervous fibres. And here the influence of the nervous ganglia in the viscera becomes a matter of very interesting consideration. Every important organ is supplied with these ganglia and plexuses, which are, there is every reason to believe, peculiar or modified in size, form, and minute organization, according to the functions each organ has to perform:—*secondly*,

* I consider throughout these lectures sympathy as a pathological state, according to its derivation, and have only prefixed the adjective morbid to prevent misconception.

continuity of surface or tissue: thus the state of the mucous membrane of the stomach affects the mucous surface of the mouth, the fauces, the pharynx, &c.; and *thirdly, the contiguity of one organ or tissue to another*: during a state of distension the colon presses on the diaphragm, so as to affect the action of the heart and other parts; and flatulence of the stomach disorders the functions of the heart and diaphragm, &c. These constitute the direct media of sympathy between different organs — namely, nervous communication, continuity of surface, and contiguity of situation.

The *second class, or indirect modes and media* of morbid sympathy, are—*first, by vascular communication*. It must be obvious that when a portion of a vessel is affected another portion of it will experience more or less of disorder. We know, in cases of inflammation or irritation of a lymphatic vessel, how readily the morbid condition extends along it and affects the glands. Here vascular communication, even in these vessels, is a ready medium for conveying morbid action; and it is still more remarkably evinced in respect of the arteries and veins.

Secondly, by the states of the circulating fluids. This is one of the most important modes in which morbid action is propagated, and it is one which forms, as it were, the basis—the groundwork, of the system of *humoral pathology*, which for many years was believed in so generally throughout the civilised world. When the morbid affections of the nervous system were so much insisted upon by Hoffman and Cullen, the humoral pathology became obscured, but closer observation and less addiction to theory have shewn that the circulating fluids are readily and early disordered in the course of disease, and being thus disordered they become sources of a more general malady—of disease not limited to particular organs, but extending more or less to the whole economy.

The *third class*, under which I have arranged morbid sympathies, is the *reflected*. That this is not a very recently recognised class of sympathies is shown by the fact that it was so denominated and discussed by me as early as 1824. The reflected sympathies are propagated or de-

veloped—*first*, by fibrils proceeding to and communicating with ganglia or plexuses, and supplying by means of these sources contractile and secreting viscera. Thus irritation occasions the contraction of a portion of intestine; the irritation being propagated most probably to a nervous ganglion, and then reflected in the form of contraction. But it is not improbable, and my recollection of the phenomena I have observed upon irritating portions of the lower animals seems to warrant the inference, that irritation is followed by contraction in a more direct manner, or, at least, in a manner less obviously indirect than that now mentioned: and contraction may follow irritation without the irritating impression being conveyed to ganglia remote from the organ or part irritated. Thus, when the hearts of some fishes are removed from all their connections, they will contract upon irritation for a short time, the minute ganglia and plexuses in the structure of the organ thus enabling them to react; and so on as regards other hollow organs admitting of a sensible reaction upon irritation.

Secondly, the reflected sympathies are developed by means of the communications of the organic or ganglial, or soft nerves, with the roots of the spinal nerves. I was first led, as far back as 25 years, to describe this mode in which sympathetic irritation is propagated to the muscles of voluntary motion, by a singular case which came under my care in 1821, at the Surrey Dispensary, when officiating at that institution. A female, of middle age, presented herself with violent contraction and relaxations of the abdominal muscles alternating rapidly and constantly. The spine evinced no tenderness when examined, no pain nor any other morbid phenomenon; and the functions of the extremities and of the urinary organs were unaffected. Conceiving that the affection might be sympathetic of worms in the intestines, I prescribed full doses of spirits of turpentine and castor oil, which brought away enormous quantities of lumbrici teres and faeces; and as soon as these were evacuated the morbid action ceased. The irritation of the extremities of the nerves of the digestive canal evidently was conveyed to the roots of the spinal nerves, and was

thence reflected by the nerves of motion upon the abdominal muscles. It does not appear necessary to infer that, in this case, the irritation was conveyed to the spinal cord itself, inasmuch as neither morbid sensibility nor other disorder could be traced to it. We can explain the phenomena by considering that morbid irritation was transmitted merely to the roots of the spinal nerves by the ganglial and sympathetic nerves, and that the irritation thus transmitted to these roots produced this affection of the abdominal muscles. The second class, then, of reflected sympathies are those reflected by the ganglionated roots of the spinal nerves.

Thirdly, irritations, or impressions, are reflected from internal viscera and internal parts, by means, or through the media, of the spinal cord and nerves to the voluntary muscles and extremities of sentient nerves, motion, or sensibility, or both being thereby affected, as shown in several diseases, more especially in hysteria, chorea, neuralgia, tetanus, &c.

The *fourth*, or last class of reflected sympathies, are those which take place through the medium of the *medulla oblongata* or brain, or both. You are aware that impressions made on organs of sense will produce reflex actions. Indeed, all the phenomena of mind may be said, so far as they produce any sensible motion or action in the economy, to be reflected. This class of sympathies are attended generally in the waking state by consciousness, although not necessarily and uniformly; and, during sleep, sensibility or consciousness is only occasionally and obscurely excited.

Having sketched the several modes in which morbid actions or states become associated, and, at the same time, considering that these associations are often brought about through more than one channel, I proceed next briefly to advert to the well-ascertained fact, that irritations or morbid conditions of any other kind may exist in organs or parts without producing those sympathetic or symptomatic phenomena which we observe in other persons in a more or less marked degree; and that *sympathetic phenomena vary not only in degree, but also in some measure in character and variety or number, with the temperament, with the habit*

of body, with the sex, with the age, with the physical powers, and with the occupations of the individual.

It is difficult to determine in what degree or mode the various sympathetic phenomena, manifested by the human subject, may vary in the *different races of the species*. Judging from my own observation, I am inclined to infer, that they are most diversified, numerous, and manifest, amongst the most highly cultivated and luxurious of the Caucasian race, and that they are the least diversified and the least manifest in the negro and the hyperborean races.

Temperament, idiosyncrasy, or diathesis, has evidently a great influence upon the sympathies—the nervous and irritable temperaments evincing the most varied and most numerous and prominent manifestations of sympathy; the phlegmatic limiting their range and diminishing their intensity. In nervous, impressible, and excitable persons, irritation or excitement on the one hand, or depression or exhaustion on the other, in whatever part of the economy it may exist, but more especially in sensitive and vital parts, is soon followed by various sympathetic changes, which either would not appear, or not appear to the same extent, in phlegmatic, robust, and muscular persons.

Much, however, will depend upon the *habit of body* and the vascular conditions of the individual. It may be difficult to determine correctly whether or no fat or very lean persons evince the more prominent range of morbid sympathies. Most probably, thin or lean persons are not only more susceptible of sympathetic phenomena, but also evince them more prominently than those who are the subjects of greater or less obesity. A similar difficulty exists respecting the greater influence exerted by vascular plethora, or by deficiency of blood. Probably both extremes, or even an approach to either extreme, may favour the development of morbid sympathies much more than a healthy state of the vascular system—than when a due relation subsists between the contained fluid and the containing vessels—between the healthy quality of the circulating fluids, and the tone and energy of the moving powers.

Sex has a most manifest influence

upon the number, character, and prominence of the sympathies. In females, especially those of a nervous and impressible temperament, both the range and the intensity of these phenomena are most striking; and the phenomena developed are most frequently connected with irritation of a particular organ or part, and are attended by more or less morbid sensibility; the nervous system being generally the media by which their sympathetic affections are developed. In proportion as nervous power is impaired, exhausted, or originally defective in this sex, the more remarkably is excitability manifested, and its more remote consequences evolved. The same remark applies also to males, but the sympathetic phenomena are not so manifest in them, unless in cases of great exhaustion of nervous power.

Age has also a very manifest influence upon the sympathies; the earlier the age, the more readily and rapidly are they developed by the primary morbid affection, and the less frequently are they connected with organic lesions. As life advances, sympathetic phenomena are less frequently and less rapidly evolved; and structural changes either proceed further without producing them, or produce them less frequently, with less severity, and in less variety. This is especially the case after 50 years of age, and after the latter climacteric age of females. At the period of female puberty, and about the period of the latter sexual change in this sex, sympathetic affections are frequent, prominent, and varied; and in many they continue, at intervals, to partake more or less of this character throughout the whole epoch of uterine activity. After the periods of dentition are passed, when the sympathies are most remarkable, owing to the relations subsisting between the state of the gums and both the ganglial and the cerebro-spinal nervous systems, the most important epoch of both healthy and morbid sympathy—or rather of synergy and sympathetic sympathy—is the epoch of puberty; after which, sympathetic affections diminish in frequency and intensity in this sex, unless in crowded towns, in persons following sedentary occupations, and the debilitated.

The state of *physical power* has, manifestly, no mean influence upon the

sympathies. Where this power has been originally great—where it is associated with nervous energy, and with perfect states of the digestive and assimilative functions—there sympathetic affections are least frequently and least severely complained of, and least frequently complicated. When organic nervous power is depressed or exhausted, more especially when the exhaustion has proceeded slowly, and continued long, a very different result is observed; the irritation of a particular organ, or part, then develops various affections, sometimes of the same character, at other times of a different character, in different parts of the frame. Numerous instances, illustrative of this pathological position, present themselves in practice amongst both sexes, especially about puberty, and for many years afterwards, more particularly in the female sex.

The *occupations* of life exert great influence upon the liability to severe or complicated sympathies. It is obvious that sedentary persons, or those occupied in ways which preclude the due exercise of the body in the open air, more especially if they pass much of their time in large towns, or in the impure air of factories, or in unhealthy localities, and those who exert the mind upon abstruse or abstract subjects, will, sooner or later, acquire an increased susceptibility of morbid impressions and irritations; and these irritations will in them develop a wider range, and a more intense grade, of sympathetic affections, than in others not similarly circumstanced—all other things being equal. It is incompatible with my plan, and with the time to which I am limited, to pursue this branch of my subject further, or to illustrate my positions by referring to acknowledged facts. This, as well as what I shall have hereafter to advance, must be viewed rather as suggestive, than as sufficiently illustrative of the subject.

I next proceed to consider, in a more special manner, some of the sympathies most frequently observed in practice, and briefly to notice, or merely to enumerate others, which opportunity may not allow me to illustrate.

In the view I am about to take of the associated morbid states, so frequently offered to our notice in practice,

I shall consider in succession, *first*, the sympathies, or associated morbid states of digestion and assimilation; *secondly*, the sympathetic phenomena connected with the circulatory and respiratory functions; *thirdly*, sympathies, or associated states of sensation and sensibility; *fourthly*, associated functions, or sympathies of animal motion; and *lastly*, the sympathies, or morbid state of the organs of reproduction. I should not have directed your attention to this subject, if I had considered that former writers had discussed it satisfactorily; but I believe that you shall find, upon referring to most of the writers upon it, that not much has hitherto been said satisfactorily upon it. That morbid sympathies are propagated through the channels I have attempted to point out, receives so frequent a confirmation, and is indeed so constantly observed in practice, that we may conclude that it is comparatively seldom that you shall observe a person labouring under a specific disease, such as has been described by nosological writers, without presenting important morbid associations and sympathetic phenomena. You will rarely meet, in the course of medical practice, with a disease implicating one particular tissue or organ, without involving, more or less, during its progress, distant, although related—(related in the manner I have attempted to point out)—functions or organs—without displaying various sympathetic phenomena, or associated morbid sensations, conditions, or actions, owing to the several relations which I have here attempted to establish.

[To be continued.]

CASE OF
STRANGULATED DIAPHRAGMATIC
HERNIA; WITH CLINICAL
REMARKS.

By ANTHONY TODD THOMSON, M.D.
Physician to University College Hospital.

EDWARD TRACEY, æt. 74, residing at No. 6, Victoria Row, St. Pancras, was admitted as a patient into University College Hospital, on 20th June, 1847. As he was unable, from his sufferings, to give a good account of himself, the

following history of his case was taken from his wife.

She stated that Tracey had always been a healthy man until twelve months since, when he fell into an area about ten feet in depth. When taken up he was unable to speak; complained of great shortness of breath, and that he felt a sensation of suffocation: he complained also of great pain in his left side, and the back of his head. He did not suffer from sickness. He had now and then a hacking cough, and could not lie down without feeling as if he should be choked; he was consequently most comfortable whilst sitting up in bed, pressing his left side with his hands, and leaning on that side. He was seen by a surgeon, who examined the side, and said there were no ribs broken. He, however, applied a bandage round the body of the patient, and also applied a plaster on his side. On the following day Tracey coughed up, three several times, a table-spoonful of blood; but he kept down his food.

As the pain of the side increased, and in other respects he became worse, the third day after the accident he was taken to Charing Cross Hospital. On that day he suffered much from nausea, but he did not vomit; his bowels had not been opened for three days, on which account a brisk purgative was administered, and it relieved him. He was three weeks in Charing Cross Hospital, yet when he left the hospital he felt poorly, very low; and his appetite, which he then lost, he never recovered. From the moment that he met with the accident, he has never been entirely free from sickness and pain in the chest. He has also been much troubled with heartburn, accompanied with a disagreeable taste in the mouth, flatulence, and occasional vomiting of a clear, nearly tasteless fluid. His wife also stated, that he was under the necessity of taking much aperient medicine, without the use of which his bowels were never opened; although they had always been regular prior to the accident.

He continued in the above state until a month since, when he became restless at night; the pain of his side increased, and his breathing, which for some time had been natural, became embarrassed and very short. He became languid and low, until the super-vention of the present attack, which

commenced five days ago, after his supper. He then complained of violent pain in the region of the stomach and in the bowels, and had had no relief in the latter for two days. He could account for this only by having got wet feet, as he had used no violent exercise, and had sustained no fresh injury. He took two purgative pills in a little gin, which appeared to relieve him. He passed a restless night, and felt very ill. On the following day he was not better, but he nevertheless walked two miles, to Berkeley Square, to visit a friend. He was there attacked with violent pain in the bowels, for which he was fomented with hot flannels, and took two doses of castor oil, and had a salt and water clyster administered to him, but without any beneficial effect. He remained in his friend's house until Thursday evening, when he was sent home in a cab, worse than when he went. He had now the advice of a medical practitioner, who administered to him several clysters, the last of which contained croton oil; but all of them were returned without producing stools. On the two subsequent days his belly began to swell, and he felt some ease from the pain; but, on the next day, Sunday, feeling no better, and the bowels not having been relieved from the time of his attack in Berkeley Square, he was conveyed to University College Hospital.

State on entering the hospital.—The abdomen was distended, very tense and tympanitic, with some slight general hardness. He complained of pain in the umbilical region. The tongue was coated with a brownish-white, moist fur; the pulse was small, quick, and somewhat resisting. He had a sensation of nausea, without vomiting; some fluid was detected in the flanks of the abdomen. The bowels, as already mentioned, had not been opened for upwards of a week, although he had a frequent desire to go to stool. The skin was cool and moist; but his countenance was expressive of great anxiety. He was ordered a castor-oil draught, an enema containing castor oil, and fomentations to the abdomen. At 6 P.M., the bowels not having been relieved, the house-physician ordered him the following:—℞ Potassæ Tart. ℥iij.; Infusi Sennæ, f℥jss.; Olei Cajuputi, mj. M. ft. haustus 3tiâ quâque horâ, donec

dejecerit alvus, sumendus. The enema was repeated.

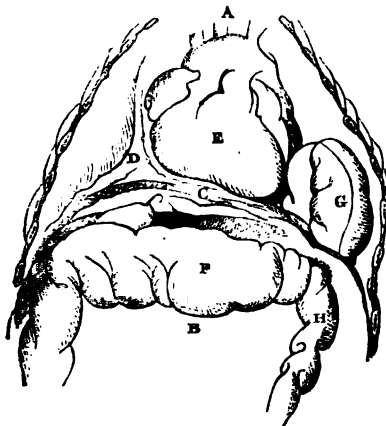
I saw him on the following day. He had had no sleep; he was suffering much pain; the frequent desire to go to stool continued. He was ordered a pill containing one grain of calomel, one twelfth of a grain of elaterium, and three grains of extract of henbane, to be taken every eighth hour, and a senna draught in the intervals. He had no relief; and in the evening, as the pain had increased, he was ordered a turpentine enema. He felt easy after the enema, which was retained for an hour, and then brought away some green fluid, but no feculent matter.

22d.—He had a restless night; the pulse was sunk; the skin cold and clammy; the abdomen more tympanitic; the countenance more anxious, and the breathing shorter than before. The bowels were still unrelieved. He was evidently sinking, and he died at one o'clock in the afternoon.

On the following day, twenty-four hours after death, the body was inspected, when the following appearances presented themselves:—The abdomen was distended, tense, and tympanitic. On opening it, there were about six ounces of a dark-green fluid in the peritoneal sac. The exterior surfaces of the intestines were of a dull aspect; and here and there were patches of recently effused lymph, and longitudinal bands uniting the doublings of the canal where they touched one another. The small intestines were not distended, but the large were greatly inflated with gas; the cæcum extending into the cavity of the pelvis, and the ascending and transverse colon much distended. A portion or large loop of the transverse and descending colon had passed through an opening in the cordiform tendon of the diaphragm into the pleural sac, and was strangulated. The colon below this stricture was contracted to the size of the small intestines, and was entirely empty. On opening the thorax, the loop of intestine, 13½ inches in length, of a pale slate colour, and distended with gas, was found in the left pleural sac, as high up as the lower margin of the fifth rib, touching the pericardium, and partially overlapped by the free margin of the left lung, which was compressed by it. It had not carried up with it any peritoneal, or any serous

membrane; and, at the seat of the strangulation only, it was very vascular, and of a darker hue than the rest of the gut. The opening in the diaphragm, through which it had passed, admitted little more than the point of the forefinger, and displayed a thin tendinous border in its whole circumference. On farther examination, it was evident that both the tenth and the eleventh ribs of the left side had been fractured. The former had not united, but had formed a false joint; the latter was united by firm osseous tissue. Connected with the tenth rib, at the seat of the fracture, and also with the intercostal space below it, was an old, firm, vascular adhesion, about an inch in breadth, and an inch and a half in length, united at its other extremity to the protruded mesocolon and the diaphragm. The protruded mesocolon was firmly adherent to the upper surface of the diaphragm, close to the opening in it.

Both lungs were emphysematous; the left more so than the right. The right pleural sac contained three ounces of bloody serum; the left, eight ounces of the same kind of fluid as that found in the abdominal cavity. The heart weighed 10½ ounces; it was soft, and the left side hypertrophied. The surface of the left ventricle at its upper part, and that of the left auricle, were covered with white opaque patches. All the valves were healthy. The liver weighed 43 ounces, and was soft. The other viscera were not examined.



A. The thoracic cavity.
B. The abdominal cavity.
C. The diaphragm.

- D. The mediastinum, pushed towards the right side by the inflated incarcerated gut.
- E. The heart.
- F. The transverse arch of the colon distended by flatus.
- G. The loop of the colon, which has passed through the artificial opening in the diaphragm.
- H. The descending colon, empty and contracted.

REMARKS.—The hernia, which was the cause of all the symptoms displayed in the above case, after the patient was taken suddenly ill, the night before his visit to his friend at Berkeley Square, must have occurred when he was seized with violent pain in the region of the stomach and the bowels; and as the opening in the diaphragm previously existed, it is probable that the forcible contraction of the abdominal muscles during the paroxysm of pain, from whatever cause it arose, may have then forced the intestine through it into the thorax. It is a curious feature in the history of the case, that after this time he had no vomiting; as in strangulated hernia, wherever it occurs, vomiting is almost invariably present. The pulse also, in strangulated hernia, is usually hard and wiry; and such may have been the case in this instance, although it was small, soft, and weak on the admission of the patient into the hospital. The opening in the diaphragm may be justly referred to laceration caused by the extremity of the fractured rib; and, instead of closing, a permanent orifice had been formed.

There were no symptoms that could have led to a correct diagnosis during the life of the patient. The obstinate constipation was supposed to depend either upon intussusception of some portion of the intestinal canal, or upon some twisting of the intestine, as if a knot were tied upon it, such as has occasionally occurred. No plan of treatment could have prevented the fatal issue; and we may confidently affirm that the death of the patient was caused by the strangulation of the gut.

Cases of this description are fortunately very rare. A case arising from the same cause, namely, laceration of the diaphragm, the consequence of a fall, a year before the hernia occurred, is recorded by Mr. James Macfadyen

of Glasgow, in the 19th volume of the *Edinburgh Medical and Surgical Journal* (p. 382). In this case the cause of the laceration was not discovered; it was, however, near the cordiform tendon of the diaphragm, and consisted of the stomach, the transverse arch of the colon, and a portion of the omentum: the aperture was consequently considerable. Mr. Macfadyen states his opinion, that the laceration "was produced by excessive muscular contraction;" whereas, in our case, it could only be correctly referred to the extremity of the broken rib. In Mr. Macfadyen's case, also, the vomiting usually attending strangulated hernia was present,—a symptom which was altogether absent in our case.

The details of this case are not likely to lead to any beneficial result in reference to the treatment of similar cases; but the publication of such cases may facilitate diagnosis, a circumstance undoubtedly of great importance, even when diseases are incurable.

30, Welbeck Street,
Sept. 15, 1847.

ON THE PATHOLOGY AND TREATMENT OF HYSTERIA.

By JAMES MILMAN COLEY, M.D.

Physician to the Western Dispensary, and Senior
Physician to the Royal Pimlico Dispensary
and Lying-in Institution.

THE frequent occurrence and uncertain duration of this disease, and its obstinate resistance to the remedies promiscuously employed for its relief, render it one of the most unfortunate afflictions to which females are liable. The term *hysteria*, which signifies some affection of the uterus, instead of pointing out the true pathology, or affording any explanation of the various symptoms of the malady, has been a constant source of erroneous practice; and the doctrine, which attributes all involuntary muscular movements or convulsions to simple irritation, without the intervention of vascular congestion or excitement, has still farther diverted modern inquirers from the actual source of this disease, and been a powerful means of encouraging empiricism. That the uterus has little if any special concern in pro-

ducing hysteria, is proved by this disease being entirely absent during the progress of malignant and other organic affections of that organ, and by its occasional appearance in the male sex. And with respect to the fatal convulsions which sometimes occur during parturition, and which are supposed by some to be dependent entirely on uterine irritation, post-mortem examinations will discover in all such cases disorganization in one of the nervous centres, corresponding with the nature and severity of the attack; and all those cases of paralysis which are connected with utero-gestation, as amaurosis, hemiplegia, &c., which disappear after vascular compression in the cerebrum or cerebellum has been removed by the evacuation of the uterus, evidently proceed from obstructed circulation, and not from special sympathy, or imaginary nervous association with this organ.

Hysteria consists of a disturbance in the functions of one or more of the three great nervous centres, namely, the brain, spinal marrow, and the abdominal ganglionic system of nerves, which disturbance is manifested by symptoms peculiar to the respective seats of the disease. Thus, when the brain is affected, we find there are present a suspension of the senses and of consciousness, or of the perception, arising from external stimuli, manifested by stupor, temporary loss of sight, hearing, smell, taste, and touch; and this condition of the brain may advance, and partake more or less of the nature of epilepsy or apoplexy; that is, it may be accompanied with convulsions, or stertorous breathing and coma, and terminate in death, like ordinary cases of those diseases, either by asphyxia, or compression, or extravasation in the brain. When death occurs from paralysis of the pneumogastric nerves, or from asphyxia from any other cause, the right cavities of the heart are found distended with black blood, and the pulmonary capillaries in a state of congestion, while the left auricle and ventricle are empty. On the contrary, when the patient dies from congestion in the arterial capillaries of the brain, the left cavities of the heart and the principal arteries, which conduct the aortal circulation, are gorged with blood. An instance of fatal termination of cerebral hysteria

in apoplexy occurred to a patient of my friend Mr. Ince, of Lower Grosvenor Place, a general practitioner possessing great discrimination and sound judgment. The patient was a young lady, who had been subject to repeated attacks of hysteria, which at times resembled epilepsy. At length one of the paroxysms terminated with symptoms of apoplexy, which proved fatal. On examining the brain after death, Mr. Ince found a large coagulum of blood extravasated in one of the lateral ventricles. These, however, are rare and extreme cases. In ordinary hysterical affections arising from temporary obstruction in the cerebral circulation, the face and neck are flushed with a sudden efflorescence, which sometimes extends to the extremities; and in some females these flushings are the principal indications of the disease, when they occur in combination with depression of the mental energies, or slight intermission in the functions of the pneumogastric nerves. Cerebral hysteria sometimes results from the transition of congestion, or subacute inflammation, from the mucous membrane of the bowels, or from some fibrous structure, to the brain.

CASE I.—A lady, who had been in great distress respecting the loss of her husband, was attacked with dysentery. At the end of a week from the commencement of the attack, the dysentery and concomitant fever entirely disappeared, in consequence of the sudden supervention of hysteria, which declared itself by a slow interrupted pulse, absence of febrile heat, and by depression of spirits, accompanied with frequent fits of crying, followed by a copious discharge of limpid urine. This hysterical state continued three weeks, when it subsided as suddenly as it commenced, and left the patient in perfect health.

CASE II.—Another lady, who had been suffering three weeks with inflammatory typhus, became suddenly afflicted with hysterical mania, produced by transition of disease from the tendinous expansion of the occipitofrontalis muscle to the serous membranes of the brain. She had been exposed to considerable anxiety before her malady commenced. The maniacal paroxysms were always terminated by fits of laughing and crying; and after continuing to recur for the space

of a week, during which time the pulse was slow, and all symptoms of fever were absent, the patient became free from all disease.

The condition of the cerebral membranes in these cases appeared to be that of congestion, otherwise the pulse would have been excited, and local heat developed, as we find in cases of mania proceeding from subacute arachnitis.

When the pulmonary or aortal circulation is interrupted by hysteria, we shall find the capillary vessels in the skin or subcutaneous cellular membrane endeavouring to relieve the temporary plethora, which may oppress the membranes of the brain, or of the air or alimentary passages; by producing the sudden efflorescence before alluded to on some parts of the external surface, or effusion of serum in the cellular membrane of the hands or feet. A similar temporary congestion or plethora in the minute vessels of the skin, and similar oedematous swellings, which are its result, occur during the violent paroxysms of spasm in the glottis, arising from interruption to the pulmonary circulation, and a corresponding congestion in the lungs.* The hysterical cough is a modification of disordered function in the laryngeal branch of the pneumogastric nerve, and may be always traced to some mental emotion disturbing the circulation in the brain; and hysterical vomiting may also be referred to cerebral congestion acting upon the stomach through the medium of the pneumogastric nerves.

CASE III.—April 22, 1846, I was requested in the middle of the night to visit a lady, who was attacked with vertigo, and unable to lie down in bed. She had also extreme agitation and restlessness, involuntary contraction of the flexor muscles of the upper extremities, and every now and then gave utterance to the most violent hysterical screams. Every time she attempted to lie down the symptoms were increased, and she complained of loss of feeling in the right arm and leg, attended with tingling in both hands, and fear of death. Her countenance was pale and contracted. As soon as she was able to swallow I prescribed a mustard emetic, which excited full vomiting,

* See my Treatise on the Diseases of Children, Longman and Co., 1846, p. 248.

and at the end of two hours all the symptoms of hysteria disappeared. In this case I was induced to abstain from bleeding, on account of the delicate emaciated state of the patient, and the exsanguine appearance of the countenance.

The symptoms of hysteria proceeding from temporary congestion in the membranes of the medulla spinalis are convulsions of the voluntary muscles, or remitting neuralgia, or morbid perception, or temporary paralysis, or enervation in the nerves of sensation. The latter symptoms are produced by vascular excitement or compression acting upon the sentient fibrils, and the former by a derangement produced in the same manner in the functions of the motor filaments of the spinal nerves; and the seat of the disease may be discovered by an attentive observation of the phenomena. The true hysterical affection of the spinal nerves is seldom if ever unconnected with a corresponding disturbance in the functions of the cerebrum, or of the great sympathetic. The exact condition of the capillary vessels in the membranes of the spinal marrow, during the hysterical paroxysm, is not known; but I have repeatedly discovered the existence of congestion or inflammation in the arachnoid and pia mater, in the vicinity of the pons Varolii, and effusion beneath those membranes after fatal convulsions in cases complicated with paralysis of the voluntary muscles; which facts tend to prove that the nerves of sensation and voluntary motion are excited by increased vascularity in their investing membranes, and paralyzed by the compression occasioned by interrupted circulation, effusion, or extravasation; and this appears to me to be a much more correct explanation of the cause of convulsion and paralysis than simple irritation of the nervous fibrils unconnected with the sanguineous circulation. Among the various symptoms arising from hysterical excitement of the motor fibrils of the spinal nerves may be mentioned the partial contractions of the intercostal and abdominal muscles, commonly described as cramps. These are generally disregarded by the medical attendant, and considered irremediable, the patient being left to endure protracted misery. The most common seats of these singular convulsions are

the recti abdominis muscles. Hard, large, round, incompressible tumors are formed in them by the sudden involuntary contraction of the muscular fibres, presenting the appearance of solid indurations, and communicating to the superincumbent hand a rotatory and sometimes a pulsating motion, resembling that of the fœtus in utero.

CASE IV.—In 1827 I was consulted by a young unmarried lady, æt. 23, who had been a severe sufferer from this disease. On examining the abdomen during one of the hysterical paroxysms I discovered a hard round tumor, as large as a child's head, in the recti muscles, which communicated a rotatory and strong pulsating motion. At the end of a few seconds this tumor, which was seated in the upper part of the abdomen, subsided, and was succeeded immediately afterwards by a similar swelling in the front of the hypogastric region, resembling the impregnated uterus at the sixth month of gestation. This round, hard, projecting, and circumscribed distension continued about half a minute, after which the abdomen was contracted in the most rigid manner; so that, after the tumor had disappeared, the whole front of that region became rigid, uneven, and retracted as close as possible to the subjacent viscera. This concave contraction of the abdominal parietes continued about half a minute, after which time the parts resumed their natural appearance.

CASE V.—A lady, æt. 37, mother of two children, had been many years tormented with frequent attacks of hysteria in various forms. I was consulted in 1835, when I had an opportunity of examining the surface of the abdomen during a distressing paroxysm of what she called cramp. I found the abdominal muscles, especially the recti, drawn convulsively into hard tumors, which afforded to the hand a sensation exactly resembling that of the rolling or locomotion of a fœtus. She described it as if something were grasping her bowels.

In some of these cases the pulsations discovered in the abdominal region are apt to mislead the medical attendant into a belief of the existence of aneurism. Morgagni relates a case in which this mistake was made in a young lady, who was supposed to be labouring under aneurism in the abdominal

aorta, until it was ascertained that there was no correspondence between the extraordinary pulsation in the abdomen and that in the left ventricle of the heart. I believe these pulsations to proceed from a convulsive motion in the abdominal muscles.

Hysterical disturbance in the abdominal ganglionic nerves, is manifested by irregular action in some of the numerous organs which they supply with vitality. Hence we may notice extraordinary pulsations in the heart, a disordered state of the peristaltic motion of the alimentary canal, a derangement in the secreting function of the kidneys, &c. The pulsation of the heart is sometimes found to be intermittent; at other times this organ is troubled with a morbid irritability, which renders the contraction of the left auricle distinctly perceptible, and the pulse in the cardiac region twice as frequent as that at the wrist.

The rumbling noise, occasioned by disordered function of the fibrous coat of the bowels, so common in hysteria, whereby the gaseous contents of the colon are forcibly moved in different directions, is not peculiar to that disease; as it is met with in those cases of epilepsy which are connected with melancholy and dyspepsia; and the globus hystericus, or the sensation of a ball ascending the œsophagus and producing dysphagia and a sense of suffocation, is also neither peculiar to hysteria nor to women.

[To be concluded in our next.]

CASES AND REMARKS ON THE INHALATION OF ETHER.

By THOMAS SMITH, M.D.
Cheltenham.

CASE I.—*Tic Douloureux*—relieved by inhalation of ether—simple mode of administering it.

EARLY in May last I was consulted by the Rev. Mr. B. for a severe neuralgic affection under which he had laboured for several years. The following particulars I gleaned respecting the history of the case:—For upwards of eight years Mr. B. had complained of a strange sensation in the occiput, as though some one had been grasping portions of the integument with pincers.

This was succeeded, about six years ago, by considerable pain and uneasiness in the right hypogastric region; the pain, not much increased by pressure, coming on about three o'clock in the morning, more especially if he had made a full meal the previous day, and frequently attended with inability to lie on the right side, faintness, and a sensation of sickness. These symptoms continued until the food arrived at a certain portion of the alimentary canal, when it seemed to be propelled suddenly and violently through a strictured part of the bowels, with immediate relief to his sufferings. Some months later, an additional train of morbid phenomena became manifest. He now felt occasional pains, darting rapidly, like electricity, through the left temple, and apparently also along the course of some of the branches of the infra orbital nerve.

These symptoms continued to augment in severity, and subsequently, the parts supplied by the inferior dental nerve, from its emergence from the mental foramen, became implicated in each succeeding attack. On the first appearance of these symptoms, which happened at dinner-time, he described them as resembling a series of violent fits of tooth-ache, lasting for some time, and returning about the same hour each day. Nearly three months afterwards a decided paroxysm of tic douloureux supervened, which Mr. B. attributes to cold, which he caught one Sunday evening on returning from preaching at a neighbouring church, having been exposed in an open carriage to a keen north-east wind. At my first interview with Mr. B. I noted the following particulars of his case:—Age 60; temperament sanguine; spare, active habit; middle stature; conformation of body good; chest deep and expansive; small grey eyes, bright, slightly indicative of biliary derangement; cheeks alternately pale and flushed; lips dry, under-one swollen, tender, the left inner half secreting a viscid irritating ichor, which excoriated the surface, producing eczema rubrum. The tongue was large, broad, indented, flabby, tremulous, and covered with a creamy fur; on the left half the fur remained after the other portion had become clean; thirst constant and excessive; the appetite capricious;

bowels constipated, dejections dark, exhibiting small masses of hardened scybala, or like a quill, sometimes assuming the appearance of a worm very much diminished in size; urine limpid, in large quantities; pulse strong, full, and jerking, 92; skin dry; nights restless, often passed without sleep for weeks together. Pressure on the epigastric region induced a deep heavy dull pain; the descending aorta strongly pulsative, and communicating a thrilling feel to the fingers; the left lobe of the liver enlarged, and tender to the touch; bowels slightly tympanitic; heart's action violently impulsive, regular in its beats, no abnormal bruit; percussion elicited a duller sound than natural; respiration 20, healthy; chest free from pulmonary disease; lower jaw painful to the touch, mouth opened with difficulty, constant dribbling of saliva of a gluey tenacious nature. During the paroxysms, the pains in the face darting through the left temple, and down the left cheek as far as the chin, were of the most acute and excruciating character. At the commencement, and during the attack, my patient involuntarily pressed the abdomen firmly with his right hand and arm, raised the left hand to the affected cheek, as if to shield it from impending danger, closed the right eye, and, what appeared to me remarkable, being different to anything I had hitherto observed in facial neuralgia, and, I believe, contrary to the recorded experience of most authors on this disease, the muscles of the right or non-affected side of the face were those which I noticed to be principally contracted. He likewise bent his body forwards, apparently with the view to relieve the tension of the abdominal muscles, flexed the right leg on the thigh, and drew the limb up and across the left extremity.

To the by-stander these paroxysms were frightfully distressing, coming on suddenly in the midst of conversation or whilst eating, and recurring without the slightest intimation of their approach, and frequently lasting for hours at a time: they appeared to render life completely miserable.

From the length of time that had elapsed since Mr. B. had first fallen a victim to this afflicting disorder, it was natural to suppose, from his sta-

tion in life, that he had tried every remedy which human ingenuity or skill could devise to mitigate his sufferings; but whilst medicines had done little in procuring relief, change of air had, on almost every occasion, materially abridged the duration of the paroxysms, mitigated the intense agony of the attacks, and rendered them of less frequent occurrence. It was mainly with the hope that the salubrious air of Cheltenham might prove of benefit to him, and not from any well-grounded expectation of obtaining relief from medical treatment, that my patient was induced to come and reside in this locality. Anxious, however, to relieve his sufferings if it were possible, I prescribed for him the following pills:—℞ Ext. Belladonnæ, gr. ½; Fellis Tauri Inspissat, gr. iv.; Pulv. Scammonis, gr. iij.; Sodæ Sesquicarbonat, gr. iij.; Assafœtidæ, gr. ss. M. ut fiant Pilulæ duæ horâ somni sumendæ.

May 7th.—To continue the pills, and cautiously to apply, night and morning, an atropine lotion to the side of the face.—℞ Atropinæ Sulphat, gr. ij.; Aquæ Rosæ, ℥ss. misce, fiat lotio. In addition I advised an alkaline warm bath twice a week, perfect abstinence from all stimulating foods or drinks, and constant exercise, either passive or active, as it could be borne, in the open air.

Under this plan of treatment, my patient gradually experienced an amelioration in his sufferings. His nights were more tranquil; his appetite improved; his physical powers equal to greater exertion.

12th.—The liver still continuing painful, I recommended the surface of the abdomen to be rubbed night and morning with the following ointment:—℞ Ung. Hydrarg. Fort., Ung. Iodinæ Comp. aa. ℥iv.; Camphoræ, ℥j. M.

As the tic douloureux subsided in the face, an intermitting pain of a gnawing character attacked the dorsum of each foot, which greatly impeded locomotion. To this was superadded palpitation of the heart, and slight periodic dyspnœa.

16th.—He was now ordered to discontinue the pills and ointment, and to apply the atropine lotion to the præcordial region, and to take the following powders:—℞ Pulv. Cinchonæ, Ferri Sesquioxidi, aa. gr. x;

Pulv. Scammonii, gr. j.; Pulv. Zingiberis, gr. ij.; Pulv. Rhei, gr. iij. M. et fiat pulv. ter in die capiendus e quovis vehiculo idon. 3xii. of the Effervescing Pittville Saline* to be taken every morning before breakfast,—3vj. for a dose, with an interval of twenty minutes before taking the second. To repeat the alkaline baths; and, for his usual beverage, to have effervescing magnesia, or potash water, or lime water and milk.

For three weeks Mr. B. pursued this plan of treatment with considerable advantage. Towards the close of the month of June the weather suddenly changed, accompanied with a keen north-east wind. The paroxysms now returned as severe as ever.

June 28th, Mr. B. complained of fulness and tension in the abdomen. The aorta was pulsating violently. This occasioned some inquietude in his mind, lest it should be the result of aneurism. Having calmed his fears on this score, I took the opportunity of recommending the inhalation of ether as offering the only available means of instant relief. To this proposition he assented, after some little hesitation, arising from its failure on a former occasion, when the ether was administered by an apparatus, and which had the effect of exasperating his symptoms, inducing epistaxis, with confusion and giddiness in the head. As I attributed all these unpleasant results to the mode in which the ether was inhaled, I flattered myself that I should be able completely to effect all I desired by the following simple contrivance, without any injurious consequences ensuing. Into a large wash-hand basin was put about half a pint of hot water. Into this basin I placed a water-jug, with a mouth sufficiently capacious to receive the face. I then poured two drachms of rectified sulphuric ether into the jug, and requested Mr. B. to breathe into and out of the vessel. To prevent the escape of the vapour, I encircled his face with a thick towel. Within two minutes the ether took effect, as evidenced by the deep inspiration, dropping of the hands, and extension of the lower extremities. On recovering his sensibility, he merely complained of a feeling of sinking;

* This is merely the saline water of the Pittville Spa charged with carbonic acid gas, which I have found in my cases to act more beneficially than the waters in their original state.

and up to the present time there has been no return of the paroxysms, with the exception of one or two trifling shocks experienced during the day on which the ether was inhaled. To guard against their recurrence, I advised small doses of turpentine—m̄v. three or four times a day in water. By perseverance in this plan, conjoined with the baths above described, and the occasional use of the effervescing Pittville waters, my patient has enjoyed an immunity from his former sufferings, which, to use his own expressive words, has now rendered his life "one of comparative happiness."

REMARKS.—The above case is instructive on two points: first, as evincing the potent influence of ether in this severe and intractable disorder. The simplicity and ready adaptation of the means adopted to bring my patient under the ethereal influence were signally successful. Had an apparatus been used, as on the former occasion, I have little doubt but it would have been attended with similar depressing symptoms. And, secondly, it is interesting, as shewing what strange and unaccountable variations take place in disease. In the case above cited, we have had, contrary to the usual appearance in such attacks, the muscles of the opposite side thrown into convulsive action, whilst the affected part seemed perfectly free from disease. How far this phenomenon may be dependent upon an affection implicating as well the seventh pair of nerves as the two maxillary branches of the fifth pair, in the present condition of my patient it is not easy to decide. My own impression leads me to the conclusion that the cause, wherever it may be located, communicates its influence to both these nerves.

Portland House, Cheltenham,
Sept. 16, 1847.

CAUSE OF THE TETANUS PRODUCED BY STRYCHNIA.

FROM the results of experiments on the action of strychnia, Prof. Meyer of Zurich concludes that the tetanic spasms produced by this agent depend on reflex action. The poison produces a morbid increase of that condition of the central organs of the nervous system by which reflex movements are excited; and does not act, therefore, by simply irritating the muscular nerve-fibres, as was formerly supposed.—*Schmidt's Jahrb.* No. 8, 1847.

MEDICAL GAZETTE.

FRIDAY, OCT. 1, 1847.

It is with regret we perceive by announcements in the daily journals that the Asiatic cholera has reached the interior of Europe, and is gradually extending itself in a north-westerly direction. It is credibly reported that several cases have occurred at Charkav, in South Western Russia, and at Kiev, a large town on the right bank of the Dnieper, and on the frontiers of Poland.* The Governor-General of Poland has appointed a committee of physicians to suggest measures for the preservation of the kingdom from the irruption of the cholera; and it is stated that the authorities at Warsaw were preparing hospitals and a lazaretto in that city.

With a greatly augmented mortality from zymotic diseases, and the unchecked continuance of causes which promote this mortality, it is obvious that the metropolis is but ill prepared to resist the invasion of this formidable malady. While we are talking, other nations are acting. Anti-sanitary views are at present triumphant. During the last week there were no less than 111 deaths from typhus fever, to a weekly summer average of 30!—and there can be no doubt that this large increase is in great part due to the absence of proper sanitary measures, to effect the prompt removal of those preventable causes of disease, which abound in the metropolis and in all large cities. The Government may appoint Boards of Health, but so long as crowded streets are undrained, unsewered, and unventilated, their efforts to avert the attacks of cholera will be futile. All this was

just as well known in 1831 as it is at present; yet sixteen years have been suffered to elapse, and the only practical step actually taken, has been the appointment of a committee, within the last few weeks, to inquire into the special means requisite for the sanitary improvement of the metropolis! The Houses of Legislature appear to have forgotten the maxim, — *salus populi suprema lex*. Party and political discussions of the most trivial kind, and leading to no practical good, are allowed to occupy a large portion of each session of Parliament—those measures which would really tend to the *salus populi* being indefinitely postponed!

Among the numerous facilities afforded by the English law to the escape of criminals charged with the crime of murder by poisoning, there is one suggested to us by the case of Johnson, reported in our last number,* which requires to be specially noticed. The question which it involves is of great interest to the medical profession: it affects not only the credit of medical witnesses, but, as we hope to prove, the proper administration of justice.

There is a well-known privilege which can be, and is generally, exercised by the counsel for a prisoner—namely, that of excluding from the Court during trial, the witnesses summoned for the prosecution. Each witness, therefore, gives his evidence without knowing what has been stated by those who have preceded him; and any inconsistencies or discrepancies in the evidence are immediately detected and exposed. Admitting that, from prejudice or other causes, a kind of conspiracy has been got up against a person innocently accused of a crime, it is impossible under such a system that it can escape detection; and the innocence of the accused will be made

* Kiev is about six hundred miles west by south of Warsaw.

manifest by the conflicting statements of those who appear against him. So far the privilege is in accordance with reason and equity. No test can be too severe to apply to the testimony of those who profess to speak to *moral* circumstances: they depose to facts connected with the conduct of the prisoner,—his possession of poison,—his motives, and the circumstances from which they believe that he administered poison. How easily ignorant and uneducated persons may be deceived in such matters, and to what an extent facts of vital importance to the accused may be misunderstood, and, as a necessary consequence, misrepresented,—must be well known to all who are acquainted with the proceedings of our Criminal courts. It is therefore only an act of justice to one who is accused of a heinous crime, that this moral testimony should be most closely sifted, and that no witness should be allowed to shape his evidence according to the statements of other witnesses.

The question has, however, a widely different bearing when this privilege is permitted to be exercised in respect to the testimony of *medical* or scientific witnesses. In the first place, we hold that these witnesses cannot be suspected of any desire to concoct a charge against an accused person. Medical evidence as often justly leads to an acquittal as to a conviction; and, excepting the judge, we know of no party who appears in so free and unbiassed a character at a criminal trial for poisoning, as the medical or scientific witness. A medical witness may be able to depose that he has discovered poison, and that, from the appearances of the body, the deceased had probably died from its effects; but beyond this, before entering the Court, he has seldom any knowledge of the facts of the case. He cannot, therefore, be

supposed to have any prejudice against the accused, or to have any motive for joining with other medical witnesses in making up a false statement respecting the presence of poison or the cause of death. Hence there is no just reason for his exclusion from Court during the trial.

From the respectability of the profession, and the independent nature of medical evidence, it is the general practice of the judges to make a special exception in favour of medical or scientific men, and to permit them to remain in Court when the other witnesses in the case are ordered to withdraw. It would be easy to shew, that, while by the adoption of this rule the cause of truth and justice is not likely to suffer,—by the neglect of it the evidence may in some instances press most unfairly against the accused; and in other cases, through a misapprehension or mistake, a criminal may be turned loose upon society. A relative or friend may state to the Court the symptoms under which the deceased laboured after having partaken of food: he may describe their progress, and the manner in which the deceased died: he may state how or in what way the food was dressed and eaten,—when he began to vomit,—the colour and appearance of the matters ejected,—in short, he may supply unknowingly all the medical facts which will suffice to confirm or rebut the opinion of death from poison. But let us suppose that the medical witness is ordered out of Court, and that he is not permitted to hear elicited by the examination and cross-examination, that testimony which may be absolutely necessary to the formation of a correct medical opinion,—the result may be, whether for the benefit of the prisoner or to the injury of his case, the truth will remain concealed. So far from its being the common practice of our judges to exclude

medical and scientific men from Court, it is by no means unusual for them during the trial to inquire whether they are present, and to request them to give special attention to the statements of the witnesses. The reading of selected portions of evidence for the opinion of the medical witness cannot make up for his exclusion from Court, or supply that material information which he might have derived by listening to the statements of the witness. Besides, it is important to remember that counsel, from being unskilled in medical science, may select for an opinion, exactly those portions of the evidence which are of least moment in a *medical* point of view! Thus, then, the scientific witness may find, by the charge of the judge, that his evidence is entirely misrepresented to the jury, in consequence of the omission of some very material point in the re-examination.

Now as we hold by the ancient maxim, *judez damnatur, cum nocens absoluitur*, and believe that our Law-authorities really wish to detect and punish crime, in spite of the daily neglect of those means which ensure the development of truth, and of the open toleration of practices that can only serve as a shield to criminals, we propose to prove that, in one instance at least, the exclusion of the medical witnesses from Court during a trial, has led to a complete failure of justice.

It is unnecessary for us to recapitulate the evidence in the case of Johnson.* The deceased died on the 3rd of December, 1846; a coroner's inquest was held, but the fact that the man had died from poison was not clearly established; the body was buried, but strong suspicion having subsequently arisen

against the wife, it was disinterred on the 9th of March, 1847. A more perfect examination was made, and the tissues were then for the first time analysed; arsenic was clearly detected in the liver, intestines, heart, and blood, kidneys, gullet, and tongue, and the muscular substance of the thigh! The largest proportion of poison was derived from the liver, kidney, and intestines, and the smallest quantity, amounting to only an *exceedingly slight trace*, was detected in the heart and blood. During the trial of the woman for murder, all the witnesses were ordered out of Court at the request of the prisoner's counsel; the judge, Mr. BARON ALDERSON, not making the usual exception in favour of the medical gentlemen. Mr. Leigh, a medical witness, who was present at the exhumation, but who on this occasion did not conduct the chemical analysis, stated in his evidence that there was a large quantity of "fluid blood" in the body. He was asked by the judge to account for this, and he said that it might have arisen from the penetration of water, the grave being wet, and the lid of the coffin being split from one end to the other. The body had been buried only three months, but the wood was thin, and the coffin had apparently cracked from the superincumbent weight of earth. The judge then asked—"Supposing there to be arsenic in the soil of the churchyard, was it not possible for some of that arsenic to be washed into, or introduced into the body along with the water?"—to which the witness replied, that he thought it was possible!

Mr. Watson, who had performed the analysis, was next examined. As he had been ordered out of Court, he did not hear the evidence of Mr. Leigh; and the counsel who examined him was unable so to put his scientific questions as to prove

* A report of the case will be found in our last number; independently of the facts there stated, the remarks which we are about to make are based on authentic documents, which have been kindly forwarded to us by a correspondent.

that the washing of the arsenic into the body by water, even admitting the poison to be present in the soil in a soluble form, would not account for the medical facts; because *less* arsenic was found in the "fluid or watery blood" (the supposed source of the poison) than in the remote and deep-seated organs and tissues of the body, to which the water of the church-yard could not have had access! That the learned judge was completely deceived by thus receiving the medical evidence piecemeal, will, we think, be apparent by the following extract from his summing up to the jury. We make our quotation, not from any newspaper report, but from the notes taken by a gentleman who was in Court during the trial. The judge observed:—

"It came out in the evidence that the grave in which the deceased was buried was damp: well, if that was so, *how can we tell what came into it with the water before the second examination of the body?* * * * What is the reason that the skilful chemist tests the purity of distilled water? Why, he tells you—for the purpose of satisfying himself that the arsenic did not come in by the distilled water. If this be so, and of it you can have no doubt—how can you tell that the arsenic stated to have been found in the body on the second examination, *did not come in from the undistilled water in the grave?* That appears to me, gentlemen, to be a circumstance which it is very proper for you to take into your consideration. * * * If, then, you find so very minute a portion of arsenic in the body after it was in the damp grave—the Lord knows where, and the Lord knows how—*how can we say that it did not come in with the water?*"

Our readers may imagine what effect such an address as this would have upon a provincial jury in a case of alleged murder by poison, where the slightest circumstances are seized upon in order to return a verdict of

acquittal! In the face of such a summing up, and of the unexplained statements of the medical witnesses, it would have been utterly impossible for them to have returned a verdict of guilty!

That the summing up was, however, founded upon a complete misapprehension of the medical facts, will, we think, be apparent from the following considerations:—If the blood had been diluted with water, and this water had dissolved arsenic from the earth, it follows that a greater quantity of the poison would have been found in it than in other parts of the body: but what was the fact? There was more arsenic in the tongue, gullet, and muscles of the thigh respectively, than in the heart and "fluid blood"—*i. e.* than in the very medium from which the *whole* of the body was supposed by the learned judge and jury to have derived its poisonous impregnation in the short period of three months from a crack in the coffin-lid!* To assert that the *small* quantity of arsenic found in the body was in favour of this assumed origin, indicates an entire want of knowledge of medical facts; because the arsenic detected by Mr. Watson was that which had been *absorbed*, and this portion of the poison always exists, and therefore never can be found except in *very small* quantity! Had the learned judge put the question to Mr. Watson, he might have elicited this well-known fact; but he omitted to make the inquiry, and by his remarks left the jury to infer that the *small* quantity present, actually favoured the view of its origin from the soil!

In the foregoing observations it is assumed that the earth of the cemetery

* Much was said about arsenic not being found in the body at the first examination. There is one simple answer to this: the chemical processes were directed chiefly to the *contents* of the stomach, not to the *tissues*; and the examination was not so carefully made as on the second occasion.

contained arsenic in a *soluble* form. The judge, guided by Mr. Leigh's statement, without having put any question on the subject to Mr. Watson, whose evidence was, however, vitally affected by it, told the jury that "the undistilled water" in the "damp grave" might have dissolved the arsenic, and carried it into the body: but what are the facts?

Professors Orfila, Flandin, and others, who have diligently examined the earth of various cemeteries, find that arsenic is only occasionally present in very minute proportion; and that it is *always* in such a state as to be completely *insoluble in water*! It is a most important circumstance that arsenic has never yet been found in the earth in a form to become dissolved by water. It cannot, therefore, impregnate a body in the mode assumed in the case of Johnson. The impossibility of arsenic being thus washed into a dead body from the arsenical earth of a churchyard was clearly proved by M. Ollivier, in 1844, before the Academy of Medicine; and it has been further established by the results of some experiments recently performed by Professor Orfila. He has found that dead bodies, and parts of bodies buried for three months in a cemetery of which the earth was known to contain arsenic, did not yield on analysis the slightest evidence of the presence of this poison!* We have not, however, come to the end of the erroneous medical assumptions in Johnson's case. For the first time, we believe, in an English Court of Law, it was assumed in the prisoner's favour, that the earth of the cemetery in which the deceased was buried contained arsenic! Since the trial, a portion of the earth, taken from near the grave of Johnson, has been care-

fully analysed by Mr. Watson,* with the result that not the slightest trace of arsenic either in a soluble or insoluble form existed in it!

If trials for poisoning are to be conducted on these loose principles,—if medical facts of vital importance are to be thus distorted, and all sorts of erroneous assumptions are to be made in favour of a prisoner, it is easy to perceive that the crime of secret poisoning must flourish in England. A Court of Law cannot always avoid being misled by the evidence of medical witnesses; but it is not compelled to encourage any proceeding which can favour the concealment of such a series of chemical blunders as came out upon this trial. Had the witness who made the analysis been allowed to remain in Court during the trial, and had his evidence been properly taken with respect to matters which were so strongly laid before the jury, we anticipate that there would have been a very different result. His exclusion from Court prevented him from giving that information which would have brought *the truth* to light! This, of course, answered the purpose of the counsel for the prisoner; he had, *medically* speaking, a bad case to defend, and he took one of the very best means of defence which was open to him, namely, by requiring that the *medical* witnesses should leave the Court, and by taking advantage of all omissions and unexplained statements made by each witness in turn. We do not say that this practice is unfair on the part of the counsel in defence,—all we contend for is, that under it persons must be criminally poisoned by arsenic, the whole truth can never come to light, and the verdict of a jury must be often based, as it appears to have been in this instance, upon a series of chemical mistakes!

* An account of these experiments is published in our French contemporary, the *Gazette Médicale*, for the 3d July, 1847.

* See page 601.

We had imagined that we should never again hear of "a jury of matrons" being summoned to determine whether a woman, convicted of a capital crime, and who pleaded pregnancy in stay of execution, was or was not "quick with child." After a public exposure of the gross mistake into which a jury of ignorant women was led on the question of pregnancy, we had hoped that this absurd relic of antiquity would have been for ever banished from our Courts of judicature. It appears, however, that we have not rightly calculated the force of legal precedent; for the Old Bailey has witnessed, during the last week, the revival of a practice which would lead us to suppose that the art of midwifery had not advanced a single step since the reign of Edward I.; that, in short, none were so competent as "matrons" to determine a fact upon which, even in respect to themselves, they are daily obliged to consult members of the medical profession!

Mary Anne Hunt, who was convicted at the August sessions of murdering an old woman named Stowell, was placed at the bar. The unfortunate woman appeared to be enduring great mental suffering, and was hardly able to support herself while in the dock.

Mr. Baron PLATT, addressing the prisoner, asked her whether she had anything to say in stay of execution of her sentence?

The prisoner in a faint voice replied, "I believe that I am in the family way."

The learned judge then said,—Let a jury of matrons be empannelled to try whether the prisoner is quick with child or not.

She was then removed, and at a later period of the day was again placed at the bar, when a jury of twelve matrons was sworn, to determine the question whether the prisoner was in the condition alluded to or not.

Mr. Baron PLATT addressing them said, that they were summoned to that

court as a jury of matrons, to perform a very solemn duty, which was to ascertain whether the prisoner then standing at the bar was big with a quick child or not. They would use their best skill (!) to ascertain that fact, and having done so, it would be their duty to return a verdict upon the oath they had taken. If they should think it necessary to have the assistance of a surgeon they were at liberty to do so.

The jury then retired into the gaol with the prisoner, and about half an hour afterwards returned into court.

Mr. Streight then inquired whether they had agreed upon their verdict, and whether they considered the prisoner was quick with child or not?

The forematron replied that their verdict was, that she was not.

Mr. Baron PLATT.—You say that she is not quick with child—that she has not a living child within her?

Forematron.—That is our verdict. We are all of that opinion.

Mr. Baron PLATT.—Let the prisoner be removed. The law must take its course.

Now as we have not the same confidence in the opinion of the jury of matrons as was shown by the learned judge, we trust the law will *not* be permitted to take its course, until competent professional men have had an opportunity of examining the prisoner. We see neither reason nor justice in the law professing to respite a convicted female on the ground of pregnancy, and at the same time omitting to take proper care that the opinion thus given should be free from doubt. The learned judge cannot surely be aware of what transpired in the case of a woman named Wright, who was convicted of murder at the Norwich Lent Assizes in 1832. This woman pleaded pregnancy. The judge empannelled "a jury of matrons," who brought in a verdict of "Not quick with child"! The law "would have taken its course" with this woman but for the intervention of several medical practitioners in Norwich, who represented to the judge that the opinion of

the matrons was probably erroneous. They were directed to examine the female, and it was found that she was not only pregnant, but that she had passed the period of quickening! This female was delivered of a living child only four months afterwards, thus proving the utter worthlessness of the verdict of the matrons.* Surely this fact is of itself sufficient to prevent the law taking its course, as directed by Mr. Baron Platt, in the case of the woman Hunt. We have yet to learn that the matrons of the Old Bailey are more skilled in the question of pregnancy and quickening than their co-jurresses of Norwich, who, by a signal blunder, nearly consigned a living child to the untimely fate of its mother!

We trust that measures will be taken by Government to remove such a scandal from our code of jurisprudence.

RECIPIENTS.

Tracts upon Health, for Cottage Circulation. 1. *Health Preservation.* 2. *On Interrupted Health and Sick-room Duties.* By HENRY MORLEY. 12mo. pp. 23 and 21. London: Edmonds. 1847.

In a brief introductory note, the author suggests that a good hint may be taken from the Religious Tracts, which circulate to so much advantage far and wide among the poor, if professional men would but add to them a few medical tracts, similar in form, in price, and in simplicity of style: by aiming in these to substitute true hygiene for the false systems of traditional prejudice, much disease and death might be averted, and much happiness to the community might be secured. We have been greatly pleased with the manner in which the author has commenced this laudable but delicate task in the tracts before us, which are written with great clearness, and with the soundest discretion: they contain within a small compass many

of those doctrines which it is the absolute duty of every professional man to impart to his own non-professional circle respecting the means of preserving health, and the cautions to be adopted by the sick.

We cannot refrain from giving a long extract from one of these tracts, as we highly approve of the spirit in which the author writes, and should be happy to find that the profession united to aid him in his sensible and benevolent purpose.

"*Domestic medicine.*—At no time give or take medicine of any description without good advice. Medicine cannot make well better, but it cannot fail to make well worse. It can cure sickness sometimes, but it can never increase health. Be warned by the old epitaph—'I was well—I would be better—and here I am.' Every drug acts by creating a disease. Its usual object is to excite a morbid action which shall neutralise (so to speak) the powers of another action already set up in the body. In every recovery you require time for nature to repair the injuries occasioned by the medicine, as well as those which yet remain from the disease against which it was provided as a remedy. To use a plain example: you know well, because it is evident to your eyes, that the surgeon with his scalpel 'wounds to heal.' If he removes the smallest tumor, he must still leave a knife-wound in its place; and for the cure of this he depends trustfully on nature. It is exactly so with the physician and his remedies. Medicine is the knife which works in parts unseen; and if you would not with your own hand thrust a lancet into your child's skin, so neither should you thrust a drug into its body.

"An annual bleeding is an annual blunder.

"The best 'Spring medicines' are air and exercise. The use of *purgatives*, if it do no worse, tends to confine the bowels. Accustomed to stimulants, they lose their healthy action: habitual use of drugs is necessary, and the body becomes indefinitely injured. Castor oil is the only medicine which can be safely left in your household to be used at discretion, and with it you must try to be discreet. Confined bowels depend upon a cause; to discover and remove this is their proper remedy. Regulate your diet, your exercise: attend to all the rules of health; accustom your bowels to move daily at the same hour: they will soon become more punctual than yourself, and you will find this rule of more value to you as a healthy purgative than any quantity of salts and senna. If these precautions fail, it is your duty to seek medical advice.

* A full account of this case was published in the 12th volume of this journal, at pages 22 and 585.

"The Infant's Opiate.—You must not give to babies any opiate. Whether it be laudanum itself or opium, Godfrey or paregoric; 'Drops of Death' should be upon the label. You have no doubt seen a Bible-print which figures 'Herod's Murdering of the Innocents,' mothers cling in agony around children whose breasts are pierced, and infants struggle in the grasp of brawny soldiers. That was a fearful slaughter; yet it was mercy when compared with the more fearful murdering—the yet more devastating slaughter—among which we daily move. In Herod's time there was one day of slaying: in our time there is not a day of rest. Then, death came by the sword with one short pain, and mothers struggled to preserve their offspring: now, children perish with the lingering torments of a poison, and drops of death are poured out to them by a mother's hand. The sale extends through every corner of our land. If you have administered to your children these destructive drugs in ignorance—or under counsel different from that to which you now, I hope and pray, are listening—there can be no reproach upon your consciences. But from this day there will be, if you refuse now to be warned. The early death of your own children, or the almost inevitable sorrows of their after-life, upon your own head be they, if you will not hear advice. According to their constitution, or the doses which your children have received, some who survive will become even idiots, many (reared thus to stimulus from infancy) will become drunkards, some dull in intellect, all more or less broken in constitution, in mind and body, weaker, and less able to struggle onward in the world than otherwise they would have been. To procure for yourself a selfish gratification—to still the crying of an ill-managed child, instead of seeking to improve your infant's temper by increased attention to the requirements of its health, you go to your cupboard, you take out the cruel dose. Of course the child is still. You sleep the sleep of health; but your child has not the refreshment of repose. You have called DEATH to stand and watch beside its crib, to hold his cold clenched hand over the baby's mouth, and fix it in a spell, for your convenience, until you wake and come to it again."

APOTHECARIES' HALL.

NAMES of gentlemen who passed their examination in the Science and Practice of Medicine, and received Certificates to Practise, on Thursday, Sept. 23, 1847.—Henry Lambden, Burgh, Lincolnshire.—John T. Campion, Exeter, Devon.—John Coghlan Haverly, Liverpool.

Proceedings of Societies.

MANCHESTER PATHOLOGICAL SOCIETY.

Aug. 5th, 1847.

Rheumatism—Endo-pericarditis—Tubercular disease of lungs.

DR. BELL presented a heart whose pericardial sac was everywhere obliterated by close adhesion of the serous surface; the lining membrane of the left auricle was likewise very thick and opaque, and the mitral valve indurated thickened, shortened, and opaque. Another morbid state was found co-existing with these, namely, tubercle of the lungs: the right lung was generally infiltrated with tubercle, besides containing numberless granulations; and in its uppermost lobe was a cavity as large as the fist. A few granulations of tubercle were also seen in the summit of the left lung: no further disease existed.

The patient, William Dean, aged 20 years at the time of his decease, was attacked Feb. 15th, 1845, with rheumatic fever, complicated with sore throat, pulmonary catarrh, excessive sweats, and a red miliary eruption on the skin; and on the 18th, came under the care of Dr. Watts. The rheumatism was very severe, and there was more than ordinary prostration of strength; and though the heart's sounds were correct, yet, as a precautionary measure, twelve ounces of blood were taken by cupping the cardiac region, and Hope's plan of treatment was tried, but without success. On Feb. 21st, the seventh day of the rheumatism, he experienced pain in the heart, where a single bellows murmur was then heard. Cupping was again resorted to, a grain of calomel and one of opium were given every four hours, a mild antimonial was taken every second hour, and the blue ointment was rubbed all over the chest, armpits, and groins, and kept constantly applied. The pains were immediately relieved by these means, and the same evening his pulse was reduced from 136 to 108, and afterwards gradually to the normal standard. On February 22d, besides the previous murmur, a friction-sound was audible over the right half of the cardiac region, and along the course of the sternum, like the double creaking of a shoe-sole or new saddle, and so distinct as seemingly to be felt by the ear pressing on the stethoscope. The mercurial action made abortive manifestations from the fourth to seventh day of the pericarditis, when at length the gums were fully affected; and, with the establishment of pyalism, the pericarditis ceased, for on the morrow the friction-sound was supplanted by single creaking, and next day this creaking had also become extinct, and

single bellows murmur alone remained. The pulmonary catarrh gave way coincidentally with the pericarditis. The mercury was administered until March 4th, and the mouth continued tender seven days longer. The bellows murmur finally became inaudible, and the young man regained apparently such perfect health that this was looked upon at the time as a striking example of the curative effect of medicine.

On the 7th of November, 1846, he again consulted Dr. Watts for cough of three months' duration; and on examination the signs of confirmed tubercular disease were detected in the upper lobe of the right lung, and in the region of the heart was heard a bellows murmur,—loudest a little within and below the site of the nipple. The case afterwards came under Dr. Bell's care. The pulmonary disease progressed very gradually, as also with unusually little symptomatic disturbance, till, at length, anasarca supervening, the patient sank under the accumulated disease.

The case exemplified the limited extent of the curative action of mercury in exudative inflammation of the heart's membranes, even under circumstances apparently the most promising. First, the mercury did not prevent the development of the endopericarditis; second, it did not hinder the adhesion of the pericardium, nor the organisation of the coagulable lymph in the substance of the mitral valve so as to prevent the ultimate atrophy: whilst, on the other hand, it might be considered as possibly one of the causes of the subsequent development of tubercular disease.

Obliteration of a considerable portion of vena cava inferior of some years' standing.

Dr. Francis sent for presentation the particulars of a case, in which a considerable portion of the vena cava inferior had been obliterated by inflammation some years previously to death.

The following is an account of the dissection of the vessel, and its afferent branches.

On reflecting the small intestines to the right side, an immensely dilated vein, running along the spine, close to the root of the mesentery, was exposed. This vessel—the left spermatic vein—was distended with blood, and had formed the main channel of the circulation from the lower half of the body. Above, it passed into the left renal vein, which also was proportionably increased in size downwards: after crossing the margin of the pelvis, it reached the ovary and left side of the uterus, along which it passed to the cervix. At this point it became lost in a large plexus of swollen veins surrounding the neck of the bladder, the vagina, and the rectum.

The whole of the vena cava below the renal veins, together with the common, the internal, and external iliac veins, were completely obliterated. They were imbedded in a mass of strong, dense, fibro-cellular tissue,—the result of inflammation that had extended around them. Their walls were thickened, and were for the most part firmly glued together, although in one or two places this had not happened.

The branches of the internal iliac vein about the pyriformis and great sciatic hole were also obliterated, whilst the obturator veins were immensely enlarged and distended. There was no obstruction below Ponpart's ligament; the femoral and saphæna veins communicated as usual: and about this part there were a great many large and abnormally developed veins, many of which were taking a direction towards the lower opening of the pelvis and the obturator foramen.

The arteries corresponding with these vessels presented no abnormal appearances: the iliacs were accompanied each by a rather large vena comes.

In the lungs were several small vomices, with pneumonia and bronchitis; and in the left, a rather large vomica, lined with cicatrix tissue, and much puckered and contracted. There were many adhesions about the ovaries and broad ligaments.

The patient, a woman 34 years of age, had been for nearly three years from time to time under Dr. Francis's care in the Manchester Workhouse. The symptoms which had induced her during this time to apply for relief were always referred to the chest; and, indeed, the stethoscope had from the commencement detected the cavity in the chest spoken of above. In addition to the chest affection, however, it was remarked that her legs were always much swollen, so that she was accustomed habitually to wear bandages around them. This swelling was of a firm and elastic kind, and did not pit upon pressure, after the manner of ordinary dropsical structures.

Among the most interesting features in the present case, attention was drawn to the unusual circumstance of the occurrence of so severe and extensive an inflammation of the vena cava,—and more especially of its termination in recovery. The remarkable manner, too, in which a compensating circulation had become developed was particularly referred to.

In another case, which had been published by Dr. Black, where the inflammation and obstruction of the cava had occurred at that portion of the vessel which is lodged behind the liver, the current of blood had been directed chiefly through the epigastric, intercostal, and mammary veins, whilst in other cases the vena azygos had taken upon

itself the chief additional burden. In the present instance, however, the left spermatic vein had been chiefly instrumental in maintaining the circulation, having been fed by the obturator, the superficial, perineal, pudic, and other veins, which in the ordinary state of parts are small and insignificant. In regard to the cause of the phlebitis, no certain information could be gathered; it is probable, however, that it resulted from some affection during the puerperal state, which she is known, from collateral evidence, to have passed through with some difficulty.

Correspondence.

ANALYSIS OF THE SOIL OF A BURIAL-GROUND SUPPOSED TO CONTAIN ARSENIC.

[THE following letter in reference to the mode of examining the earth of a churchyard suspected to contain arsenic, may interest some of our readers. By the report published at page 555 of our last number, it will be seen that the woman Johnson was acquitted chiefly on the presumption that the earth of the grave in which the body of her husband had been buried contained arsenic. The result of the analysis made by Mr. Watson proves that this was a mistake, and the medical facts shew that even if the earth had contained arsenic, it would not have accounted for the presence of the poison in the body. If the course pursued by Mr. Baron Alderson on this occasion—i. e. of assuming that arsenic in a soluble form is a natural constituent of the soil of English churchyards—is to be followed on future trials, it is clear that in every case of exhumation, the earth of the grave in which the body has been buried, must be carefully analysed for arsenic. The plan adopted by Mr. Watson may therefore serve as a guide for others who are engaged in these inquiries.]

SIR,—I forward a report of the chemical examination of a portion of the soil obtained from the burial-ground of Deane churchyard, in which the man Johnson was buried.

I had a grave, or large hole, sunk, on the 18th of this month, between two other graves, in a line directly east of that of Johnson, and at the depth of two yards (this being the depth at which the sexton said Johnson was buried, and the soil there also similar to that in which he was buried), and at the distance of two and a half yards from the foot of Johnson's grave, I took away a quantity of the soil, which consisted of wet clay and shale. I have experimented upon it as follows:—

Having weighed a pound (avoirdupois)

of the soil, I mixed it up in a porcelain mortar with distilled water, and washed the clay and small shaley matter from the larger pieces of shale, or aluminous stone; these pieces so separated weighed $3\frac{1}{2}$ ounces: the $12\frac{1}{2}$ ounces of clay, &c., I boiled for four hours with the water used in washing (4000 grain measures), occasionally adding a little more water to supply the loss by evaporation. The boiled mixture, drained through calico, gave a clear and colourless liquor. A portion of this liquor being tested by the processes of Reinsch and Marsh, did not give the slightest trace of arsenic; the copper, in Reinsch's process, not being tarnished, and the flame, in Marsh's, not giving the slightest metallic deposit or stain to a Wedgwood's ware pestle. Another portion of the liquor, after being evaporated to one-fifth of its bulk, appeared equally free from arsenic as before, when tested by the same processes.

Having also weighed one pound and a half of the soil, and washed it as before with distilled water, I separated seven ounces of the large pieces of shale; and the seventeen ounces of clay and small shaley matter, with the water used in washing (6000 gr. mea.), and 800 gr. mea. of pure hydrochloric acid, sp. gr. 1.15, I put into a glass retort, having a receiver connected. The addition of the acid did not cause effervescence. The mixture in the retort was boiled gently for three and a half hours, at the expiration of which time, 2000 grain measures of a colourless liquid had condensed in the receiver. This liquid, tested (a portion of it unconcentrated, and another portion concentrated by evaporation) by Reinsch's process, did not tarnish the copper used; and, tested by Marsh's process, it did not cause the flame to form a metallic deposit or stain on a Wedgwood pestle. The boiled mixture obtained from the retort gave, on filtering, a liquid of a yellow colour, which colour I found to be owing to protoxide and peroxide of iron in solution. A portion of this yellow liquid was tested by Marsh's process: it did not show the presence of arsenic; no metallic deposit or stain being formed by the flame on a Wedgwood's ware pestle. Another portion of the yellow liquid was tested by Reinsch's process: the copper very soon acquired a tarnished and nearly black appearance, which I found to be owing to the iron present, and not to the presence of arsenic or antimony. Bright copper, boiled in distilled water acidulated with one-tenth its volume of pure hydrochloric acid, does not become tarnished; but by the addition of a few drops of a solution of a per-salt of iron, it almost immediately acquires a tarnished and nearly black surface, like that caused by the solution from the churchyard soil. To some of the filtered yellow liquid

I added bicarbonate of potash, slightly in excess, and boiled the mixture, by which the oxides of iron and some alumina were precipitated; after filtering, a colourless liquid was obtained, which, on being acidulated with hydrochloric acid, and tested by Reinsch's method, did not show the presence of arsenic: in this instance the copper did not become in any degree tarnished.

By careful evaporation 2000 gr. measure of the filtered yellow liquid from the retort were then concentrated down to 250 gr. measure, and this was tested by Marsh's process*: the result as satisfactorily showed the absence of arsenic as the result of the same process applied to the unconcentrated liquid: the flame did not give the slightest metallic deposit or stain when the Wedgewood's ware pestle, was applied. In this, and in all the instances of the application of Marsh's process, I used some sulphuric acid.

From the results of my experiments, it is quite evident that the soil I obtained from Deane churchyard did not contain arsenic either in a soluble or insoluble form.

I remain, sir,

Yours most respectfully,

HENRY HUGH WATSON.

Bolton-le-Moors, Aug. 1847.

Medical Intelligence.

PROHIBITION OF THE SALE OF ARSENIC.

EVERYONE who pays any attention to the events of the day must have been forcibly struck by the alarming increase of deaths through the criminal or accidental administering of arsenic. There is not in the whole range of instruments at the murderer's command a more sure and insidious agent than that consuming poison. It is to be obtained with ease under the pretext of being wanted for any one of a variety of domestic purposes; it may be offered without exciting the least suspicion; and its fatal end may be accomplished, in many instances, without its presence being detected, or even thought about. We cannot disguise the horrible fact that the properties of this destructive mineral are extensively studied and understood, in order to facilitate assassination of the worst kind—namely, that which is the result of the coldest calculation, and is committed even under the guise of affection, or by the abuse of domestic confidence. Arsenic is the most withering bane to the unhappy wretch who is tempted to resort to its use, for he is lured on by the facilities for crime which it holds out until every better feeling is laid dead, and,

while basely preparing to carry out his plans, he is every hour of his life at heart a murderer. Not only is life destroyed, but society is vitiated by this growing evil. The awfulness of death by guilty violence will scarcely bear a comparison with the horrible notion of the murderer at work in the family circle, pursuing his atrocious occupation through the confidence and affection with which he is regarded by his unsuspecting victim. The trial at the Central Criminal Court on Thursday, of which we yesterday gave a report, shows how another life has been sacrificed by the ease with which arsenic may be administered without exciting suspicion. The number of persons that have died or been executed within the last year should arouse the Government to the necessity of determining that some means should be employed in the preparation of this poison to render its presence palpable when mixed with other substances. Such a provision could be made, and should be made without delay, for as long as arsenic is allowed to be sold in a colourless and almost tasteless form, so long will it tempt the viler portion of mankind to become viler than they already are by availing themselves of its treacherous and murderous agency. There can be no difficulty in giving some decided hue or some strong nauseous taste to the deleterious substance, and prohibiting its sale except in the state calculated to prevent it from becoming the instrument of death either by design or accident. The liability to the occurrence of the latter calamity is so great that if the crime of poisoning were utterly unknown, the safety of the public against the chance introduction of arsenic into their food would demand the sort of precaution that we have suggested. Perhaps, however, the most painful circumstance of any that could arise from the present system of dealing with this dangerous drug, is the possibility of an innocent person being condemned to suffer death for a crime he has never committed. The difficulty of ascertaining by taste or colour the exact time at which poison is given, not only tends to facilitate the design of the actual assassin, but enables him to take advantage of circumstances for averting suspicion from himself, and directing it towards another. It is to be feared that many guiltless persons have suffered the penalty of death, and the opprobrium due to an offence of the vilest kind, through the impossibility of ascertaining at once when arsenic is mixed with any other substance. The hand of one may innocently offer the fatal mixture that the hand of another has guiltily prepared, or the agent of death may be designedly placed by the real murderer in such a position that it will be unsuspectingly used by one who never meditated harm, but

* His small syphon apparatus being used.

who become the victim of pre-arranged appearances. We might go on multiplying almost endlessly the possible and most probable instances in which the lives of the innocent may be destroyed for want of a very easy precaution in regulating the sale of arsenic. The adding of a powerfully nauseous taste to the deceptive sweetness and slight acid which are said to be its present characteristics, or the introduction of a strong colouring property, would not injure its efficacy for any proper use, and would thoroughly deprive it of its power in the hands of the secret assassin. We hope to see our advice taken without delay, for of all the horrors with which our criminal annals have been recently stained, none is so revolting or so frequent as the crime of murder in the domestic circle by means of arsenic.—*Times*.

* * We agree in the remarks made by our contemporary, with one exception. We do not believe that the lives of innocent persons are ever endangered in the way supposed: the tendency, in the present day, is to favour the escape of the guilty by all sorts of technicalities and unfounded assumptions. The proposition to colour arsenic, or to mix it with substances which should produce a colour when the poison was dissolved, has already been made through our own and most of the medical journals. In addition to this, the sale should be prohibited except by registered persons, who should be made responsible, and only upon the order of two medical practitioners.

EFFECTS OF SOLITARY CONFINEMENT.

A late meeting of the Congress of Penal Reform held at Brussels, Dr. Chassinat of Paris gave the results of his experience of the effects of the cellular system of confinement on mind and body. His report was by no means favourable to the system. After any lengthened period the mortality amongst young persons submitted to it was infinitely greater than in other prisons. Notwithstanding the dreadful moral influences surrounding the *forçats* of the French *bagnes*, yet they had air, sunshine, motion, and labour; the confinement, compared to the cellular system, was a species of freedom; the consequence was a better physical condition. In the juvenile prison of Roquette, a youth with weak constitution could not expect to live more than two years. He quoted various statistical returns to prove that the application of the separate system to juveniles was most

injurious. What, then, should be the substitute? He found it in the agricultural colonies; those of Clairvaux and Fontenraux had been very successful. Their statistics were all in their favour, and must lead to their being generally adopted.

A NEW EPIZOOTIC. THE SMALL-POX IN SHEEP.

A VERY fatal disease, and, it is believed, new to this country, has lately made its appearance among sheep. It is the small-pox of that animal, and in its first stages more particularly many fall victims to it. It is desirable that the public should be apprised of it, in order that the necessary precautionary measures may be adopted to prevent its further propagation. It was introduced by some Spanish sheep imported from Hamburg, and has already found its way into many flocks. Several sheep affected with it have also been exposed for sale in Smithfield market. At the Royal Veterinary College experiments have been instituted, by which its infectious and contagious nature have been completely proved, and others are being carried on with a view to check its progress and to lessen its fatality.—*Times*.

REGULATION OF DRUGGISTS IN TURKEY.

It has been the custom in Turkey, as it is now in England, to allow a person to take up the trade of a druggist or dispenser of medicines without having gone through any special studies. The trade appears to have been hereditary in Turkey, and the only knowledge of drugs acquired by the son was that which he might have derived by serving in the shop of his father. Considering that it would be unjust to deprive the present race of druggists of the privileges which they had thus acquired through the laxity of Government, the Turkish Minister has ordered that all those who are now in practice might continue to exercise the trade; but that no person could hereafter be permitted to dispense drugs who had not previously gone through a special course of study. It is also ordained that all those who are at present acting as druggists, shall not be permitted to sell their business to any person not possessed of a diploma; and that, in the event of their wishing to bequeath the business to their children, these must have previously gone through the prescribed course of study. This wise measure will tend to produce great benefit throughout the Turkish dominions.

We are accustomed to regard the Turks as far below us in the scale of civilization; yet the above ordinance shews, that, in reference to a subject of great importance to the health of the community, they can fairly claim precedence.

VARIATIONS IN THE QUANTITY OF FAT
IN THE HUMAN LUNGS.

M. NATALIS GAILLOT, having examined the chemical composition of the lungs under various circumstances, especially of disease, finds, among other points, that the pulmonary tissue of the foetus contains a much larger quantity of fatty matter before than after birth: the amount begins to diminish with the first commencement of respiration. At the end of intra-uterine life, and just before the respiratory functions commence, the quantity of fatty matter in the tissues of dried lung may amount to 10, 12, 15, or 18 parts in 100: but when respiration has commenced, the proportionate quantity rapidly falls, and seldom exceeds 6 per cent. He finds, also, that in all affections of the chest, the consequence of which is a temporary or permanent obstruction to the respiratory functions over a greater or less extent of the pulmonary surface, the proportion of fatty matters increases in those parts which have become impermeable to air. The quantity of fatty matter may in such cases amount to 15, 20, 30, 40, or even 50 parts, in 100; while the healthy portions of the same organs usually do not contain more than about 10 per cent. This is observed at all periods of life, from the earliest infancy to extreme old age—*Comptes Rendus*, 12 Juillet, 1847.

IGNORANCE OF VETERINARY SURGEONS.

NINE drachms of tartar emetic, dissolved in two bottles of warm water, were prescribed for a horse which was suffering from inflammation of the chest. The farrier who officiated on the occasion, finding some difficulty in administering the first bottle by the mouth, poured the contents of the second down the nostrils, and this speedily led to the death of the animal! On inspection, it was ascertained that the horse had died asphyxiated, and the solution of tartarised antimony was found diffused through the trachea and its ramifications.—*L'Union Médicale*.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	29.54
“ “ Thermometer	54.1
Self-registering do. max. 81° min. 31°	
“ in the Thames water — 58.2 — 55°	

a From 12 observations daily. b Sun.

RAIN, in inches, 0.53: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 3.7° below the mean of the month.

BIRTHS & DEATHS IN THE METROPOLIS
During the week ending Saturday, Sept. 18.

BIRTHS.	DEATHS.	Av. of 5 Sum.
Males.... 594	Males.... 595	Males.... 479
Females.. 568	Females.. 574	Females.. 461
1162	1169	940

DEATHS IN DIFFERENT DISTRICTS.

West—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	149
North—St. Marylebone; St. Pancras; Islington; Hackney	208
Central—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London	211
East—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar	290
South—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich	311
Total	1169

CAUSES OF DEATH.

	Av. of 5 Sum.
ALL CAUSES	1169 940
SPECIFIED CAUSES	1167 935
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	383 226
Sporadic Diseases, viz.—	
2. Dropsy, Cancer, &c. of uncertain seat	132 103
3. Brain, Spinal Marrow, Nerves, and Senses	154 157
4. Lungs and other Organs of Respiration	221 226
5. Heart and Bloodvessels	29 25
6. Stomach, Liver, and other Organs of Digestion	106 94
7. Diseases of the Kidneys, &c.	12 8
8. Childbirth, Diseases of the Uterus, &c.	14 10
9. Rheumatism, Diseases of the Bones, Joints, &c.	12 7
10. Skin, Cellular Tissue, &c.	3 2
11. Old Age	52 50
12. Violence, Privation, Cold, and Intemperance	49 28

The following is a selection of the numbers of Deaths from the most important special causes

Small-pox	26	Convulsion	38
Measles	44		
Scarlatina	32	Bronchitis	31
Whooping-cough ..	27	Pneumonia	36
Diarrhoea	95	Phthisis	127
Typhus	111	Dia. of Lungs, &c. ..	8
Dropsy	22	Teething	15
Sudden deaths ..	14	Dia. Stomach, &c. ..	4
		Dia. of Liver, &c. ..	12
Hydrocephalus ..	33		
Apoplexy	24	Childbirth	12
Paralysis	13	Dia. of Uterus, &c. ..	2

REMARKS.—The total number of deaths was no less than 229 above the weekly summer average. This great increase of deaths is undoubtedly due to the increased fatality of zymotic diseases, the number from this class alone being 383 to a summer average of 226.

NOTICES TO CORRESPONDENTS.

We cannot enter into the merits of the dispute respecting the Medical Directory.

A Constant Subscriber.—We are not aware of the existence of any institution for the blind, such as that to which our correspondent refers. The late Mr. Day founded a charity by his will, under which pensions are conferred upon a limited number of the blind, who have reached a certain age.

The papers of Mr. Barrett and Mr. Clendon, with two Obituary notices, are unavoidably postponed until next week.

Lectures.

LECTURES
ON THE
DISEASES OF INFANCY AND
CHILDHOOD,

Delivered at the Middlesex Hospital

BY CHARLES WEST, M.D.

Physician-Accoucheur to, and Lecturer on Midwifery at, the Middlesex Hospital, and Senior Physician to the Royal Infirmary for Children.

LECTURE XII.

Night terrors—usually depend on intestinal disorder, not on primary disease of the brain—their symptoms not to be mistaken for those of incipient hydrocephalus—sometimes continue to occur for many weeks—Treatment.

Epilepsy—a disease of youth rather than of childhood—frequently recurring convulsions in childhood never to be neglected.

Chorea—often connected with disorders of approaching puberty—not peculiar to childhood—principles of treatment—Partial chorea.

Paralysis—sometimes congenital—often follows very slight and temporary symptoms of cerebral disturbance—most frequent during process of dentition—Recovery very uncertain—great importance of early treatment—serious results of its remaining uncured.—Diagnosis—Treatment.

Facial hemiplegia in new-born infants.

We have now nearly completed our examination of the diseases of the brain and spinal cord in childhood; but there are some affections of the nervous system which are often independent of any change in the nervous centres such as our means of anatomical investigation can discover, or which are but the expression of the sympathy of the brain and spinal cord with the sufferings of some distant organ. To their brief study we must devote the present hour.

It happens sometimes that a child who has gone to bed apparently well, and has slept soundly for a short time, awakes suddenly in great terror, and with a loud and piercing cry. The child will be found sitting up in its bed, crying out, as if in an agony of fear, "Oh dear! oh dear! take it away! father! mother!" while terror is depicted in its countenance, and it does not recognise its parents, who alarmed by the shriek have come into its room, but seems wholly occupied with the fearful impression that has aroused it from sleep. By degrees consciousness returns, the child now clings to its mother or its nurse, sometimes wants

to be taken up and carried about the room, and, by degrees, sometimes in ten minutes, sometimes in half an hour, it grows quiet, and again falls asleep. As the terror abates, the child, in some instances, grows quiet at once, but frequently it bursts into a fit of passionate weeping, and sobs itself to rest in its mother's arms. In some instances a quantity of limpid urine is voided as the fit passes off; but this occurrence is by no means constant. Usually the remainder of the night is passed in tolerably sound sleep, and the following night the child may rest quite undisturbed, or the terrors may again return, and with precisely the same symptoms as before. The attack usually comes on after the child has been from half an hour to a couple of hours asleep, and two attacks do not generally occur in the same night. They are always more or less distinctly associated with the impression of some object which occasions alarm—as a cat, or dog, which is fancied to be on the bed—and this illusion continues even after the child has recognised those who are around it. The condition is not one of delirium, for the child has no other hallucinations, but the attack may return night after night with precisely the same characters. The previous sleep sometimes seems sound, and though often uneasy, yet talking in the sleep does not usually occur, and after the child has been pacified it generally sleeps heavily, perhaps till morning, or till a second, usually slighter attack, comes on; but this scarcely ever occurs until after sleep has again lasted for an hour or longer.

Seizures of this kind may come on under a great variety of circumstances, and, according to the cause whence they have arisen, may continue to return for many weeks together, or may occur but a few times. As far as I have had the opportunity of judging, they are never the indications of primary mischief in the brain, but are always associated with some disturbance of the intestinal canal, and more or less obvious gastric disorder.

A few months ago, I saw a little boy, aged 11 months, in whom the process of dentition was just beginning, and who for ten days had had slight diarrhoea, with dark and slimy evacuations. He then awoke, though before apparently sleeping soundly, at night, with a sudden start, and a scream so violent that all the people in the house heard it. When taken out of bed he continued crying loudly for some minutes, but by degrees grew quiet, and fell asleep again for some minutes, after which he sweated profusely. This sleep was as heavy as it had been before, though the eyes were not always closed during it, but after an uncertain interval, of from half an hour to two hours, he would again awake with the same loud

and terrified scream, and again in a few minutes sink into slumber. The first of these attacks had taken place six days before the child was brought to me: they were increasing in frequency; as many as seven or eight having occurred in the course of a single night, and even during his sleep in the day-time the child was not free from them. He was cheerful, however, at other times: he sucked well, did not vomit, his head was not hot, and the anterior fontanelle was depressed rather than prominent: but the abdomen was rather full, and somewhat tender, the gums were much swollen, and the tongue rather furred.

The gums were lanced, the child was put in a tepid bath every night; a powder containing one grain of Hydr. c. Creth., and one of Dover's powder, was given daily at bed-time, and ʒj. of castor oil every morning, and the attacks subsided.

Cases of this kind illustrate a point of practice, which, though important in the adult (you will find it insisted on by Andral in his *Clinique Médicale*), is still more so in the child. It is, that in many affections of the brain there is a stage quite at the commencement in which depletion may be out of place, but opiates or sedatives will allay the irritation, which, if let alone, would issue in dangerous or fatal congestion, or inflammation.

In the majority of cases of these *night terrors* the condition of the bowels is one of constipation, not of diarrhoea. Sometimes, after gastric disorder has continued for a few days, in the course of which perhaps vomiting may have occurred, an attack of this nocturnal alarm may throw the parents into a state of great apprehension lest hydrocephalus should be impending. I have seen a very severe attack of jaundice come on with these symptoms, and in such a case it is important to bear in mind the difference between the sudden, sympathetic disturbance of the brain, and the more gradual approach of hydrocephalus, with the drowsiness the child experiences, and yet the difficulty it has in going to sleep, the restlessness all night long, or the unquiet slumber, with the moaning and starting which I pointed out to you when speaking of that disease. If, then, bearing in mind these facts, you find, too, that the child who has had this attack in the night, yet does not complain of intolerance of light, or of much or any headache, and while the head is cool and the pulse regular, the abdomen is 'full and hard, and perhaps slightly tender, you will scarcely take the less for the more dangerous affection.

But the symptom may last for weeks or months together, neither diminishing nor much increasing in severity, so that it seems almost to constitute an independent disease—

a view which Dr. Hesse of Altona*, who has written a very good pamphlet on it, is disposed to take somewhat too generally.

Such a case was that of a delicate boy, 7 years old, who, during the previous twelve months, had been cutting his first permanent molar teeth, and for the whole of that time had suffered from attacks of night terrors, which usually came on about half an hour after he had fallen asleep. He then started up with a wild and terrified look, and loud outcries, appearing not to know any one for some time, then begging to be taken up, and becoming pacified after being carried about for half an hour in his father's arms. As the seizure passed off he used to void a large quantity of limpid urine, and having fallen asleep again, never but once had a second attack of it in the same night, while sometimes none occurred for two or three nights together. In other respects he had seemed to be tolerably well, and was a lively and intelligent child, though for about 14 days before he was brought to me his health had appeared less good, and there were evident indications of gastric disorder. I never saw this child but once again, so I cannot tell you his subsequent history, but his case affords a good illustration of the occasional persistence of these symptoms for a long time without the supervention of any really serious disease.

Although these symptoms may be the result of sympathetic affection of the brain through the medium of the viscera, still you should watch a child in whom they had frequently occurred with especial care, knowing that long-continued irritation of the nervous centres might, under the influence of a comparatively trivial cause, issue in serious disease. Your chief attention, however, must be directed to the removal of the disorder of the intestinal canal, and this should be attempted by gentle means, by the careful regulation of the diet, and the judicious combination of aperients and tonics, rather than by drastic purgatives. At the same time, too, it is right that the child should not be left in the dark or alone; the affection resembles night-mare, and in childhood dream-images seem to mingle with the waking impressions much more than in adult age. A light burning brightly in the room, and a familiar face meeting the child's eye at once on waking, will do much towards breaking the spell, and towards allaying its fears. Harshness in such cases is quite out of place, and few pieces of cruelty can be greater than forcing a timid little child, in whom threatenings of these attacks have occurred, to go to bed in the dark, or to lie there without a candle, while its active imagination conjures up before it

* Ueber das nächtliche Aufschrecken der Kinder im Schlafe. 8vo. Altenburg, 1845.

eyes out of the bed-curtains, or other objects in the room, the outlines of all sorts of terrific forms.

But occurrences much more alarming may take place independent of any primary disease of the nervous centres. Convulsions may come on, and these convulsions may occur again and again until the patient dies, but yet we may find few or no morbid appearances in the brain or spinal cord to account for their occurrence. I shall not, however, say more on this subject now, for I explained to you some time since, that, in the great majority of instances, such attacks of convulsions depend on a state of temporary congestion of the brain, produced in some indirect way. Any other remarks that it may be desirable to make upon them will be most in place when I speak of the different diseases in the course of which they are likely to occur.

When general convulsions continue to recur at intervals, and, without any very evident cause, for weeks or months together, the affection then receives the name of *epilepsy*. Epilepsy is a disease of all ages; its foundation may be laid in early infancy, and the fits may continue to recur up to adult age, or it may come on at any subsequent period of life. It seems, however, to be less one of the diseases of childhood, than of that period of youth during which the great changes that are accomplished at puberty are preparing or being carried out. I seldom, indeed, see cases of epilepsy at the Children's Infirmary, and, in the few instances where I have met with it, it has usually been traceable either to a fall, or a blow on the head, or to fright. Terror I believe to be by no means an infrequent exciting cause of epileptic seizures in childhood. A little girl, 10 years old, is now under my care, who will, I fear, become permanently epileptic. She was at home, in the same room with her parents, when a quarrel arose between them, and her father struck her mother; the child in terror ran into the street, and was picked up in a fit. After this had passed off, she continued well for five days, but another fit then came on while she was at the Sunday school, and she has since had several. They have, indeed, returned almost every other day, and on some days two or three of these seizures, which present all the characters of epilepsy, have occurred. It is now fourteen days since the child experienced the first attack; she is cheerful, her tongue is clean, and her bowels are regular, and the only signs of indisposition about her are, that her pulse is rather feeble, and her appetite less good than usual.

The sight of another person in a paroxysm of epilepsy has been mentioned by many writers as peculiarly likely to give rise to

its occurrence. Some time since, I had the painful task of watching the gradual blunting of all the mental powers in a fine boy, between 13 and 14 years old, who had been epileptic since his fifth year. Down to that time he had had no cerebral affection, but then, while weak from a recent attack of remittent fever, he saw his elder brother fall down in a fit of convulsions. This so frightened the child that he was immediately seized with violent convulsions, which lasted for twelve hours. Consciousness was restored only after very copious depletion and other active remedies, but he remained an epileptic for life, and when I saw him was fast sinking into a state of idiocy.

Hereditary tendency to epilepsy seems to be a very frequent cause of its occurrence in life; but besides this, there seem to be few so powerful as the practice of masturbation, to which, unhappily, children sometimes become addicted long before puberty.

Fits may occur in children, and return at intervals, even for several weeks, owing to the irritation of ascarides in the intestines. In such cases, however, you would generally have good evidence of the presence of the entozoa, and you would find the fits permanently subside on obtaining their complete expulsion.

I do not know that there are any points which call for your special attention in the treatment of epilepsy during childhood. You must look on the frequent recurrence of convulsions in early life as of the greatest moment, and must not allow yourselves to be seduced into inertness in their treatment by the hope, which you will generally find a very mistaken one, that they will cease with the changes in the system that puberty brings with it.

There is a form of partial convulsion, in which, while the consciousness is unimpaired, and the muscles to a certain extent obey the will, they do not completely so, but some of them are in a state of almost constant involuntary movement. With this affection, *chorea*, or *St. Vitus's dance*, as it is called, you are doubtless acquainted. Though more frequent before puberty than afterwards, it is by no means of common occurrence, but it certainly is not so rare as, if I judged merely from my own experience at the Children's Infirmary, where I do not meet with it in above 1 out of 1000 cases, I might conclude it to be. Sydenham, and other writers of his day, supposed that it was almost peculiar to the period shortly preceding puberty, and the circumstance that it attacks girls almost thrice as often as it does boys, seem to favour the supposition that it depends on some interruption of the great processes which ought at that time to take place in the organism. And it unquestionably does

so in many instances, though by no means so constantly as was once supposed, for, on a comparison of a large number of cases, we find that it occurs nearly as frequently between the ages of 6 and 10 years, as between the latter date and the period of puberty. The predominance of females over males, among those who are attacked by it, though especially marked in chorea, is observed in the case of many of the non-inflammatory affections of the nervous system in childhood as well as in adult life.

When chorea does not come on in connexion with that derangement of the general health which often precedes puberty, a sudden fright seems to be one of its most frequent exciting causes. At other times it appears to be connected with a state of intestinal disorder, or with some irregularity in the progress of the second dentition, while occasionally we cannot detect any signs of disease to which the involuntary muscular movements may be attributed. In some few instances of organic disease of the brain or spinal cord involuntary movements have been noticed like those of chorea, and you are doubtless aware of the connection that has now and then been observed between chorea and pericarditis.

The study of all points connected with this disease would bring before us many questions of physiological and pathological interest, but at the same time would lead us away from the special object of these lectures, which is the investigation of diseases that are either peculiar to childhood, or which undergo important modifications when they occur during early life.

For this reason it is that I have noticed this affection so briefly, and that I shall be equally short in speaking of its treatment. In the great majority of cases purgatives are indicated not only at the commencement, but throughout the course of the disease, the bowels having a great tendency to become constipated, even though the functions of the digestive organs be not otherwise disordered. At the outset it is often necessary to administer the more active purgatives, such as scammony, but you will, I think, find that the due action of the bowels is better secured by some of the warmer aperients, such as aloes, which, though so bitter, is generally readily taken by children, since, owing to its small bulk, it can be very well given in a little coarse sugar or treacle. Tonics must generally go hand in hand with aperients, and by common consent the ferruginous preparations are regarded as of peculiar value in this affection. Though much has been said about the virtues of the carbonate of iron, I do not apprehend that any one preparation has a decided superiority over the others, but having continued one for a time it will

usually be desirable to substitute for it another form of the remedy. The cold shower bath is a tonic often of remarkable service in this disease. Its use, however, must be begun with care; the child must not be frightened by being subjected all at once to too copious or too cold an affusion, but if you begin with but a small quantity of water, and that tepid, you will generally be able in the course of a few days to employ the bath in such a manner as shall be really efficacious.

Of course, while you are pursuing this tonic plan of treatment, the general management of the child must be in harmony with it. Residence in the country, sea-air and sea-bathing, a well-regulated but nutritious diet, from which even wine is not always to be excluded, will, when combined with the avoidance of over-excitement in any form, often do as much as medicine, or even more, for the restoration of your patient.

In the great majority of cases of chorea you may assure the friends of your patient that the disease will ultimately subside, though it may last for several weeks. You cannot, however, speak with the same confidence with reference to a kind of *partial chorea* that you will occasionally meet with, and in which some muscles only are affected.

A few years ago, I saw a young lady, nine years old, whose health had never been robust, and who had often suffered from headache and gastric disorder. When seven years of age, she began, without any special cause, to have frequent twitchings of the muscles of the face; and almost ever since, some muscles, either of the face, neck, mouth, or extremities, had been similarly affected, though it had scarcely ever happened that two sets of muscles were thus disturbed at the same time. She had been under the care of several practitioners, and by some had been leeches and mercurialised with manifest disadvantage. Some advantage had been derived from large doses of carbonate of iron, and when in the country during the summer before I saw her, the involuntary movements almost entirely ceased. She had not long returned home, however, when a slight twitching began about the muscles of the lower jaw; but this ceased in a few weeks, and, instead of it, there was now a convulsive twitching of the head towards one or other shoulder. A month afterwards she began to have occasional contractions of the muscles of the right hand, so that the pen would drop from her hand while writing, and the fingers would be gathered up into the hand. On the last time that I saw her, the contraction of the fingers had ceased to occur, the spasmodic movement of the neck was much less frequent, and was slighter, but there were slight movements of the back. This child's

bowels had been disordered and constipated, and her general condition was weakly. I regulated the bowels, gave the ferro-citrate of quinine, and afterwards other preparations of iron, and, when the spring came on, sent her into the country, where, as I afterwards heard, she became quite well.

The danger in these cases, and one which you cannot even with the most judicious management always guard against, is, lest some one or two muscles should become permanently affected by this spasmodic movement,—an occurrence which, though not otherwise of importance, is very distressing to the patient, particularly if that patient be a female.

Disturbance of the nervous system shews itself in children as well by loss of the motor power as by the occurrence of involuntary movements; and such an accident as the palsy of a limb naturally occasions parents the greatest anxiety. In the adult, a paralytic seizure is generally the result of very serious disease either in the brain or spinal cord, and the sign of the commencement of a series of morbid processes which issue sooner or later in the destruction of the patient's life. Non-professional persons are aware of this fact, and suppose that the same rule holds good in the case of the child as in that of the adult; but you may in most instances quiet their fears with the assurance that paralysis in infancy and childhood seldom bespeaks any peril to life, though the affection is often very slow in disappearing, and sometimes is quite incurable.

Paralysis in childhood occasionally dates from so early a period that there seems every reason for believing it to be the result of some original defect of conformation. In such cases the power over both extremities on one side is greatly impaired, and the limbs on that side are much smaller and less well-nourished, and sometimes the defective growth and want of power are evident on the whole of the same side of the face and body. Some years ago, I saw a girl, 18 years old, in whom not only were the left extremities much shorter and smaller than the right, but the left half of the face and body were so likewise. The parents of the girl stated that this inequality in size of the two halves of the body had existed from earliest infancy, and that the defective power over her limbs had not succeeded to a fit, or to any other indication of acute cerebral disease. The left side was weak, and motion imperfect, but sensation seemed to be unimpaired. The patient in this case was rather deficient in intellectual endowments. In another instance the body was well formed, but the patient, a girl of eight years of age, had had from her earliest infancy but very imperfect use of her right side. She limped with her right leg as she walked,

always treading on her toes, with the heel raised considerably above the ground, and turning the foot inwards at every step. She had but very incomplete power over her right arm; the fingers of that hand were constantly flexed and drawn into the palm; and though by a great effort she could extend them, yet the moment her attention was withdrawn, they returned to their former flexed position. Sensation was as perfect in the right limbs as in the left, but their wasted condition and smaller size, as compared with the left extremities, shewed that their nutrition had been but very imperfectly carried on.

It is almost needless to observe, that in cases such as these there is no room for treatment other than the employment of such mechanical means as may be calculated to relieve inconvenience or to diminish deformity.

Real congenital paralysis, however, is a much less frequent accident than the occurrence of partial or complete loss of power over certain limbs or muscles at a subsequent period. In many instances its commencement can be traced to some attack, though often a very brief one, of cerebral disturbance, which shewed itself perhaps by nothing more than a single convulsive seizure, or by an unusual heaviness of the head that lasted for a day or two, and then subsided of its own accord. In the majority of cases, indeed, the cerebral disturbance that precedes infantile paralysis is neither severe nor long-continued; and only two instances have come under my notice in which there seemed to be reason for supposing that it was associated with abiding mischief in the brain. It is therefore of importance to examine an infant carefully even after a very mild convulsive seizure, in order to make sure that it moves its limbs as freely as before, or that, if its power over them be impaired, appropriate treatment may be at once adopted.

Paralysis sometimes comes on independently of any evident cerebral disturbance, seeming to be induced by the irritation of dentition, or supervening on the long continuance of a constipated state of the bowels, or appearing in connection with all the indications of general debility, or succeeding to a short feverish seizure which came on suddenly when the child was in bed at night, and left it with one limb palsied in the morning. The local action of cold sometimes produces paralysis. I have met with one or two instances in which, after sitting for some time on a stone step, a child has lost power over one leg; and paralysis of the portio dura is doubtless in some cases produced by cold air, though I do not at this moment recal an instance of this having been the case in children.

No.	Sex	Age at time of attack.	Previous Symptoms.	Part Paralyzed.	Period at which Treatment was begun.	Result.
1	F.	Congenital	"	Right leg and arm	"	At 8 years old, limbs on that side wasted and shortened; power very imperfect.
2	F.	Congenital	"	Whole of left side	"	At 18 years old, left limbs wasted and shortened, and left half of face wasted; power very imperfect; intellect weak.
3	F.	9 months	Convulsions and general illness at 5 months	Left leg	Illness at 5th month not treated; galvanism, and other means, tried for a short time when 1 year old Next day	At 7½ years old, left leg wasted and shortened; treads on toes; left heel 1½ inch from ground; power imperfect. Relief after lancing gums and cutting two incisors; cured in 6 weeks.
4	M.	8 months	None: except that gums were swollen and tender; no teeth cut	Portio dura of right side		
5	F.	1 year 9 months	Screaming in night, followed by pain in limbs, said to be rheumatic; paralysis perceived at end of 3 weeks	Left leg; sensation exalted	Alleged rheumatism treated at once: paralysis after it had been observed 9 weeks	At 7½ years, leg wasted and shortened, and power imperfect.
6	M.	1 year 6 months	None, came on gradually when he had cut six teeth	Right leg	Not treated at all	At 3 years, leg wasted and shortened, but power over it was on the increase.
7	M.	1 year	Indifferent health for 6 months, associated with laryngismus and occasional convulsions	Portio dura of right side	Within 1 month	Slight improvement. Death from pneumonia at 16 months; arachnoid at base of brain opaque, but no sign of recent cerebral disease.
8	M.	1 year 4 months	Febrile attack in night—paralysis in morning; bowels constipated	Right leg	On third day	Much improved. Died of pneumonia at 1 year and 6 months.
9	M.	1 year 2 months	Weakly after measles; fits followed by paralysis; intestinal disorder	Left arm, leg, and eyelid	Next day	Arm and eyelid recovered before leg, but quite well at 15 months old.
10	F.	2 years	One fit, not connected with teething	Portio dura of right side and right leg	Not treated at all	Power over both face and leg very small at 13 years old, and leg shortened and wasted.
11	F.	2 years 1 month	None; well at night, arose paralyzed in the morning	Right leg; sensation also slightly impaired	Not treated at all	At 2 years 9 months, wasting, but no shortening of limb; power imperfect, but increasing.

12	M. 2 years 8 months	Came on gradually : no previous symptoms	Left arm and leg ; latter only partial	Not treated at all	
13	M. 3 years 6 months	Two fits on successive days, paralysis after second	Portio dura of right side	Next day	At 3½ years, power complete over leg; humerus hangs out of socket, so that left arm is ½ of an inch longer than right; power over fingers, none over hand or arm.
14	F. 3 years 8 months	Succeeded to remittent fever	Right arm and leg	Treatment begun at once, but continued only for a week	Purgation, and leeching behind ear, followed by perfect cure in 10 days.
15	F. 3 years 7 months	General health indifferent; heaviness of head for a few days	Right arm and leg	Treatment begun at once; discontinued in a few weeks	At 3 years 11 months, had gained power over arm, but none over leg.
16	M. 7 years 6 months	Came on gradually; no previous symptoms	Partial of left arm and leg	Within 3 weeks	At 4 years, power over leg, little over arm, and fingers contracted; improved under use of tonics; quite well at 4½ years.
17	M. 8 years	Ptosis of left eyelid, and double vision occasionally for 3 weeks; then giddiness for a week; then paralysis, with severe aching of right ear	Complete paralysis of portio dura of right side; with general tottering gait	Within 1 month	Improved under use of steel; quite well at 7 years 8 months. Head symptoms relieved by local depletion; leeches behind ear had no influence on paralysis of face. At 8½ years, health good, but face no better, although he had been frequently electrified.
18	M. 11 months	Poorly one evening while cutting first molars; paralysis observed next day	Nearly complete of left portio dura	Immediate adoption of severe counter-irritation to head; soon discontinued: no other treatment adopted	At 15 months, paralysis continued the same.
19	M. 1 year	General health indifferent, but walked at 10 months; had cut all incisors, and 4 molars; as well as usual over-night; paralysed in the morning	Complete loss of power over both legs, slight power over right foot; sensation somewhat impaired.	Not treated for 6 months	At 18 months, condition unchanged; electricity, blisters to spine; nux-vomica internally; no amendment at 20 months.
20	M. 1 year 7 months	No symptoms preceded, but signs of suffering in head attended it for first 8 days	Absolute loss of power over left leg, slight power over right	Within 1 week	Bowels regulated, tonics and liniments to spine, improvement in right leg within three weeks; electricity without benefit, blisters to spine, and nux-vomica internally. At 2 years 4 months, power over right leg perfect, considerable over left thigh; slight, but increasing, over left leg.

The duration of infantile paralysis, under whatever circumstances it may have come on, is extremely variable. In some instances it disappears during the employment of some simple remedy directed against the symptoms of constitutional disorder with which it was accompanied, and the same medicine suffices at once to remove the child's indisposition, and to cure its paralysis. In other cases, even though all signs of disordered health may pass away with the same rapidity, the child may continue for weeks or months with the power over one side of its body, or one half of its face, or one of its limbs, greatly impaired, or this condition may persist through the remainder of its life.

Cases might be related in illustration of all the varieties in the form of infantile paralysis, in its onset and its duration; but time will not allow me to do more than refer you to the table (pp. 610, 611), which embodies the most important points in the history of 20 cases of paralysis in infants or children.

If we leave out of the question the two cases in which the paralysis seemed to be congenital, we shall find, that, in 13 out of 18 instances, it occurred between 8 months and 3 years of age,—or, in other words, during that time when the process of dentition is going on most actively. In many of these cases, indeed, it was not preceded by any of the local signs of difficult dentition; but still it is quite apparent that the changes that are going on in the constitution during that important period of development powerfully predispose to the affection. There were but two instances in which there seemed to be any reason for regarding the paralysis as connected with permanent disease of the brain; and in 8 out of the 18 cases no indication of cerebral disturbance occurred before the paralysis, or came on afterwards.

In the two cases in which the disorder was congenital, both extremities of one side were palsied, and in one of them the power over the same side of the face was likewise impaired. In 7 of the other 18 cases the leg only was affected, and in 2 of these the power over both legs was lost; in 5 both the leg and arm were palsied; while in 6 instances facial paralysis existed. In 4 of these 6 cases the paralysis of the portio dura was not associated with impaired power over any of the limbs; once it was combined with palsy of the leg, and once with a general impairment of the power of walking.

One point which it behoves us to bear in mind in connection with these cases is, that, though cerebral symptoms, or any other form of disturbance of the general health that may have preceded the paralysis, generally subside in a short time, there is still very great danger of the paralysis continuing in such a degree as to cause much disfigure-

ment, or to interfere greatly with the usefulness of the limb. In only 6 of the 18 cases did a cure of the palsy take place; in 2 of these cases the portio dura alone was affected; in 2 others the paralysis of both leg and arm was incomplete, and was associated with a state of general debility; and in 1 the loss of power over one leg had come on after the child had been sitting for some hours on a stone door-step. In 4 of these cases treatment was commenced within two or three days after the occurrence of the paralysis, and continued uninterruptedly until the patient's recovery. In 1 the treatment was begun after the lapse of nearly three weeks; and in another, though begun immediately, it was discontinued for some weeks. In 4 instances partial improvement took place, and there seems reason for anticipating that in 1 (No. 20) this improvement will go on to complete recovery. In Nos. 7 and 17 the improvement was but slight; in both these cases, however, there was more serious cerebral disease than in any others. The treatment in No. 14 was continued only for a week; and though the child gradually recovered power over the arm, yet the leg remained quite useless. In the other three cases treatment was begun within a few days, and was continued without interruption. In the eight cases in which no treatment was adopted, or not till after the lapse of a period of six months, no improvement took place in the patient's condition. It would be difficult to find an argument to enforce the necessity of the early adoption of appropriate treatment more cogent than is furnished by these facts. The evil results of neglecting it, too, are in some respects more serious in the child than in the adult, since the disfigurement that is produced by paralysis is greater in childhood than in adult age. The muscles of a paralysed limb are almost always observed to waste; but in childhood the growth of the part becomes arrested, and in the course of a year or two it will be a half or three-quarters of an inch shorter than the corresponding member on the opposite side. On two occasions I have seen the arm completely dislocated, owing to its long-standing paralysis, the ligaments about the shoulder-joint having become so relaxed that the head of the humerus hung quite out of the glenoid cavity; and, on measuring the distance from the acromion to the tip of the finger in one of these cases, I found that an apparent elongation of the paralysed limb, to the extent of three-quarters of an inch, had thus been produced.

The diagnosis of these cases is not likely to be attended with any difficulty; for the history of the case, and the painlessness of the affected limbs, will at once shew that the loss of power over it is not the result of any

injury. Now and then, however, sensation in the affected limb appears to be exalted,—a circumstance which, when the leg is the seat of the affection, and the paralysis is incomplete, may lead to the apprehension of hip-joint disease. In such a case the child bears all its weight on the healthy limb, turns the foot of the affected side inwards when walking, and stands with the toes of that foot resting on the dorsum of the foot of the healthy side. Still, it will usually be found that the exaggerated sensibility of the paralysed limb varies greatly at different times, while that extreme increase of suffering produced in cases of hip-joint disease, on striking the head of the femur against the acetabulum by a blow upon the heel, and the fixed pain in the knee of the affected side, so characteristic of disease of the hip-joint, are absent; and these points of difference will usually enable you to distinguish between the two affections.

Another important question is, how we may distinguish between forms of paralysis such as I am here speaking of, and those more serious cases in which the palsy is a sign of organic disease in the brain. In many cases the history of the patient will of itself be sufficient to guard you from error; for if paralysis occur suddenly, affecting both limbs on one side, and be neither preceded by nor attended with any cerebral symptom, it is almost certain that it does not depend on serious organic disease of the brain. Our decision will be more difficult if the loss of power have been gradual, and especially if only one limb be affected; but if the brain be diseased, you will rarely find a mere weakening of the motor power; for connected with it there will usually be occasional involuntary tremor or nervous twitching of the limb, or contraction of the fingers or toes. When the paralysis succeeds to convulsions, the case will be still more obscure. In most cases of simple paralysis, however, the palsy comes on after a single fit; while, if it depend on some local mischief in the brain, it is generally preceded by several convulsive seizures, during each of which the limb that afterwards becomes palsied is in a state of peculiar movement, or is sometimes the only part where convulsive movements occur.

Each one of these cases must be treated according to the peculiar features that it may present. Purgatives and tonics are the remedies which I have most frequently employed; for the bowels are usually constipated, and the child often debilitated. The gentler aperients are more suitable in these cases than drastic purgatives, and you will gain more good from the preparations of iron than from other tonics. I have sometimes used stimulating embrocations to the spine and to the paralysed limb, though

rather for the sake of satisfying the relations, than with the hope of doing any very great good to the patient. I have not yet had the opportunity of giving electricity a fair trial; but in two cases where I used it I was disappointed in the result, since, though its employment occasioned much pain, it was not followed by any increase of power over the limbs. In Case 20 the application of blisters to the spine was followed by marked improvement, though, as I was giving at the same time the spirituous extract of the nux vomica, I do not know how much of the improvement to attribute to the external, and how much to the internal remedy.

If the portio dura be paralysed, you must adopt the same general treatment, but must bear in mind the possibility of the nerve having undergone pressure from some enlarged gland; and, if you find reason to believe this to be the case, you might apply a leech in the situation where the nerve passes out of the skull,—a proceeding which I once adopted with advantage.

Lastly, I will mention that infants are sometimes born with *facial hemiplegia*, as the result of injury to the nerve from application of the midwifery-forceps, or, as has in one or two cases been observed, from injury received during the passage of the head through the pelvis without any instruments having been employed. Such occurrences are rare, but it is well that you should be aware of the possibility of their being met with, independent of any injury to the brain. The paralysis in these cases generally disappears in the course of a few days or weeks.*

POISONING BY A SOMNAMBULIST.

THE subject of animal magnetism is about to come before a criminal court of law in Belgium, in reference to a charge of manslaughter against a mesmeric practitioner—Mademoiselle W., who professed to discover by mesmerism inward diseases and their remedies. This woman prescribed, while in a mesmeric trance, a certain medicinal compound for one of her patients at Antwerp. The prescription was made up and taken according to order, and the patient died very shortly afterwards, obviously from the effects of some very active poison. The woman is to be tried for the crime. It appears to be rather against *clairvoyance*, that, while the mesmerist professed to have power of detecting inward disease, she was unable to foresee that her medicine would infallibly destroy the life of her patient!

* Kennedy's Observations on Apoplexy, Paralysis, &c. of New-born Infants,—in Dublin Jour. of Med. Science, 1836; and Landouzy, Sur l'Hémiplégie Faciale chez les enfans nouveau-nés. 8vo. Paris, 1839.

ON
CHEMISTRY AND THE MICROSCOPE
IN RELATION TO
PRACTICAL MEDICINE.

By GEORGE E. DAY, M.A. & L.M. Cantab.
Member of the Royal College of Physicians,
Lecturer on Animal Chemistry and Histology
at the Middlesex Hospital School, and Physi-
cian to the Western General Dispensary.

LECTURE IV.

Uric acid—its composition—test for its presence—the various forms of its crystals—its mode of crystallizing—its metamorphoses—production of allantoin, urea, and oxalic acid from it.—Urates of potash, soda, ammonia, magnesia, and lime.—Hippuric acid—its characters and composition—the connection between hippuric and benzoic acids, and glycochol.—Cystin.

GENTLEMEN,—Having devoted the concluding portion of our last lecture to the consideration of urea, we naturally proceed to a very closely-allied substance—*uric acid*.

Uric acid is a constituent of the urinary secretion in apparently all classes of animals. It is found in man and the carnivora, in graminivora (in small quantity), in birds, amphibia, serpents, insects, and mollusca. It is the most common ingredient (either free or in combination with a base) of urinary calculi and gouty concretions. It has never yet been detected in the blood; but has been found in the saliva (Wright), the sweat (Wolf and Bird), and on the surface of ulcers in arthritic persons (Schönlein). Liebig thinks that he once found it in the juice of muscular flesh.

I shall not detain you with a description of the mode of obtaining it in a state of purity. You will find all the requisite information on this point in any recent work on organic chemistry. Its most common and abundant source is the urine of serpents, which often contains more than 90 per cent. From the recent investigations of Bensch*, it appears that we should halve the ordinarily assumed formula for uric acid; that, instead of its being $C_{10}H_4N_4O_6$, or $C_{10}H_2N_4O_6 + HO$, as fixed by Liebig and Wöhler, it should be $C_5H_2N_2O_3$, or $C_5N_2HO_3 + HO$.

It is supposed both by Liebig and Wöhler, and by Bensch, to contain one atom of water. These formulæ correspond with the numbers

Carbon	36.00
Hydrogen	2.36
Nitrogen	33.37
Oxygen	28.27

When examined with the naked eye, pure

* Liebig u. Wöhler's Annalen, vol. liv. p. 189.

uric acid appears in the form of fine scales of a brilliant white colour and a silky lustre. It is tasteless, inodorous, heavier than water, and almost insoluble in it. According to Liebig, it requires 15,000 parts of cold and 1,932 parts of boiling water for its perfect solution; and the more recent experiments of Bensch give similar results. It is insoluble in ether and alcohol. It dissolves in dilute nitric acid with the evolution of equal volumes of carbonic acid and nitrogen. On evaporating the solution, a yellowish pink tint is produced, which, on the addition of ammonia in excess, changes to a purple-red colour. This is a characteristic test of the presence of uric acid. If the quantity of uric acid is very minute, the best mode of applying the test is to evaporate its nitric-acid solution in a watchglass nearly to dryness, and then to invert it over a second watchglass containing strong ammonia. The action of the vapour will produce the characteristic tint, which becomes more obvious on placing the watchglass on a white ground, as, for instance, a piece of letter-paper. This test affords no indication whether the acid is free or combined.

The two classes of cases in which the physician has usually to look for uric acid, are in calculi and in urinary deposits.

The microscope is often of the greatest assistance in detecting the presence of uric acid; but those who are not conversant with microscopic observations may be led astray by the numerous forms in which uric acid presents itself to the eye. In figures 9, 10, 11, 12, 13, 14, and 15, you see depicted the

Fig. 9.



Fig. 10.

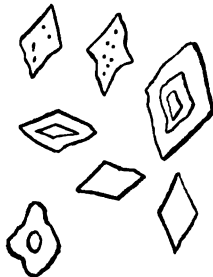


FIG. 11.



FIG. 13.

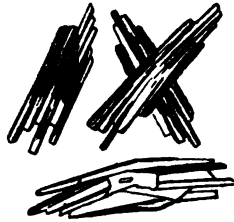


FIG. 14.

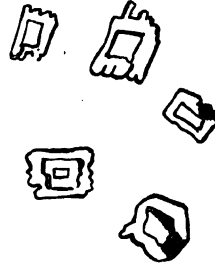


FIG. 12.

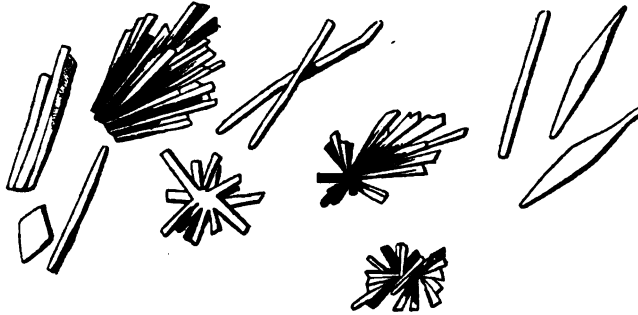


FIG. 15.



most common forms in which it occurs; and it seems difficult to trace any resemblance between some of them. Their behaviour with reagents is, however, a sufficient indication of the identity of their composition.

Schmidt has recently published some observations on the genesis or formation of these crystals. He states that if we take a concentrated solution of urate of soda or potash, and put a drop on the field of the microscope, and then place a drop of acetic acid close to it, but not actually touching it, we shall observe, as a consequence of the volatility of the acetic acid, a precipitation of globules with a diameter varying from the 300th to the 400th of a line, and exhibiting molecular motion (fig. 16). These are gra-

FIG. 16.



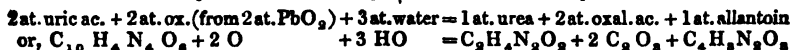
dually formed from the point of approximation, and are white spherical molecules of uric acid (a), which, as the molecular motion grows fainter, collect together in spherical masses (a'), which, after becoming oval and more transparent (a''), finally assume the form of an hexagonal tablet, or of a short vertical prism, having a base of that form (a''').

If the precipitation by the acetic acid vapour be more gradual, the original globules are larger (b), and they unite in less number to form the embryo of an hexagonal prism: indeed, not unfrequently individual globules present an oval appearance (b'), somewhat resembling the corpuscles of frogs' blood; the six angles gradually standing forth till the perfect form (b'') appears.

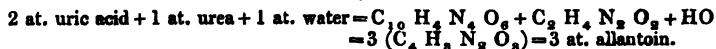
On adding acetic acid in excess to a concentrated solution of an alkaline urate at 212° , no apparent change at first takes place, the fluid remaining perfectly clear. After a time, however, we perceive a crystalline sediment, consisting solely of rectangular prisms and tablets (c, d). If the temperature of the solution be lower, rhombic crystals (e) occur; and, at a really low temperature, the hexagonal forms (a''', b'') are seen. Schmidt also states the following singular fact in connection with this subject:—

If a few drops of the solution be warmed to 212° , and placed under the microscope, and a cold object (for instance, a glass-rod, moistened with ether,) touch the edge of the drops, the crystals (a''', b'') are formed at the point of contact. These crystals increase uniformly up to a certain point, when they suddenly appear as if covered by a veil or membrane; for a few seconds they look opaque and cracked, and then burst into innumerable rectangular crystals.

From the simple original forms above mentioned, all the peculiarities of shape



If we compare the composition of allantoin with that of uric acid and urea, we find that these substances bear a highly interesting relation to each other. If to two atoms



"According to this," as Liebig observes, it is evident that the product of the secretion of the non-respiring fetus of the cow is in a certain sense identical with the products secreted by the kidneys of the breathing animals. Urea represents carbonate of ammonia from which the elements of two atoms of water have separated: allantoin represents oxalate of ammonia from which the elements of three atoms of water have separated."

occurring in figures 9 to 15 are doubtless produced.

There are one or two points connected with the metamorphosis of uric acid to which I would direct your attention. Substances have been obtained from it in the laboratory of the chemist which it also yields in that more powerful and mysterious laboratory—the animal organism. The production of allantoin and urea from uric acid presents one of the most beautiful illustrations yet afforded by the chemist of the value of his science in the elucidation of the higher departments of physiology.

If we boil uric acid in 20 parts of water, and gradually add to the boiling fluid freshly prepared peroxide of lead, the brown colour of the oxide disappears, and a heavy white powder is formed. When the peroxide begins to cease losing its brown colour on being projected into the boiling solution, the hot liquid is to be filtered, and, on cooling, it deposits hard white brilliant crystals, of which more are obtained on evaporation. The mother liquid finally crystallizes in a mass of soluble prismatic crystals. These last are pure urea; the first are allantoin or allantoic acid; whilst the powder on the filter consists of oxalate of lead, and any excess of peroxide that might have been added. The peroxide of lead has lost oxygen and become a protoxide (combined with oxalic acid); and the uric acid has yielded urea, allantoin, and oxalic acid. But I must first of all tell you what *allantoin* is. It was first observed in the allantoic fluid of the foetal calf, which is, in point of fact, the urine of the foetus. On evaporating this fluid to one fourth of its volume, this substance spontaneously crystallizes on cooling. Its composition is represented by the formula $\text{C}_4\text{H}_8\text{N}_2\text{O}_6$.

The following equations will perhaps elucidate the decomposition:—

of uric acid we add one atom of urea and one atom of water, we obtain a formula exactly corresponding with that of allantoin:—

Uric acid has been also submitted to the action of other oxidizing agents, as peroxide of manganese, permanganate of potash, and nitric acid. The consideration of the changes occurring with these reagents finds a place in most recent works on chemistry, and to these I must refer you.

I have still a few words to add regarding the *urates*, several of which are of practical importance.

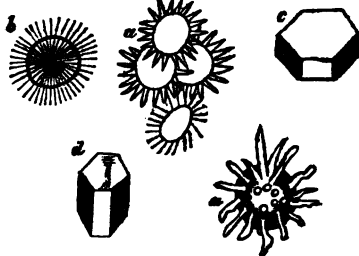
Urate of potash is a frequent constituent

of urinary calculi: it may be obtained by heating urate of ammonia with potash. On cooling, the urate of potash yields a mass of very minute acicular crystals, or else separates in granules or scales. It dissolves in 140 parts of cold, and in 85 parts of boiling water.

Urate of soda may be obtained in a similar manner, or by boiling uric acid in a solution of borax. It is far less soluble than the former salt, one part of it requiring for its solution 372 parts of cold, and 124 of boiling water. Liebig has shewn that uric acid dissolves with great facility in a solution of common phosphate of soda; that the fluid, from being alkaline, becomes acid; and that there are formed a urate of soda and an acid phosphate of soda. It is in this condition he supposes uric acid to exist in the urine.

The forms in which urate of soda crystallizes are singular.

FIG. 17.



- (a) Urate of soda (Simon).
 (b) Ditto (Vign).
 (c) and (d) are forms observed after a weak solution has stood for some time (Schmidt).

Urate of ammonia, in a state of purity, crystallizes (according to Dr. Bence Jones) in needles, but if a little chloride of sodium be added to its solution, we no longer obtain, on evaporation, a crystalline acicular deposit, but the peculiar amorphous form in which urate of ammonia occurs in urinary sediments.* On the addition of chloride of sodium to water in the proportion of 2.59 to 1000, the solubility of urate of ammonia is more than doubled. According to Liebig, this salt requires for its solution 1727 parts of cold, and 243 of boiling water.

Urate of magnesia may be prepared artificially by adding sulphate of magnesia to a boiling saturated solution of urate of potash. On cooling, and after the fluid has been allowed to stand for some time, urate of magnesia is deposited in fine needles of a silky lustre, arranged in stellar groups.

* Heintz has shown that the salt thrown down from a solution of chloride of sodium is not, as Bence Jones supposes, urate of ammonia, but that it contains both soda and ammonia. (See my Report on the Progress of Chemistry, in vol. II. p. 380, of Ranking's Half-Yearly Abstract.)

According to Liebig, it dissolves in 3593 parts of cold, and 263 of boiling water: according to Bensch, it requires only 150, or from that to 170 parts of boiling water. This salt is occasionally found in urinary calculi.

Urate of lime is occasionally present in urinary deposits, but I am unable to tell you in what crystalline form it appears. When prepared artificially from urate of potash and a solution of chloride of calcium, it occurs in white glittering needles, which dissolve pretty readily in hot water, but are thrown down again on cooling. If an excess of chloride of calcium is present, the larger quantity is taken up. This salt occurs, associated with a much larger quantity of urate of soda, in gouty concretions, and is an occasional ingredient of calculi.

Hippuric acid is an ordinary, although not a constant ingredient of the urine of the graminivora. Liebig regards it as a constant ingredient of healthy human urine, and even if this statement be too general there can be no doubt that it does very frequently occur as a hippurate in minute quantity in that secretion. Moreover, in some cases of disease a large amount is excreted.

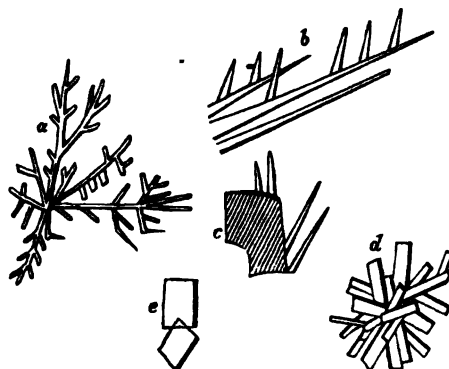
It is easily obtained from the urine of the horse or cow by evaporating the fluid to about one-tenth of its volume, and adding sufficient hydrochloric acid to give it a decidedly acid reaction. Yellow or brown crystals of hippuric acid are very soon deposited, which must be collected, dissolved in a hot solution of carbonate of soda, and filtered through animal charcoal. By the addition of hydrochloric acid to the solution we obtain tolerably pure crystals of hippuric acid. Milk of lime may be used in place of carbonate of soda; any excess of lime being removed by filtration.*—(See fig. 18, next page.)

This acid crystallizes in various forms, most commonly, however, in long four-sided prisms acuminate at the extremities. It dissolves in about 400 parts of cold water, but much more freely in hot water, from which it recrystallizes on cooling. It is freely soluble in alcohol, less so in ether.

At a moderate heat hippuric acid melts into a colourless oily fluid, which, on cooling, solidifies into a crystalline milk-white mass. At a higher temperature it undergoes decomposition, and yields a crystalline sublimate, composed of benzoic acid and benzoate of ammonia, while, at the same time, some red oily drops are produced, which develop a peculiar odour, resembling that of the Tonquin bean. Hydrocyanic acid is subsequently formed, and the previous odour is replaced by a bitter-almond smell.

* Dr. Gregory recommends that the milk of lime should be added before the evaporation of the urine; the fluid when thus treated yielding a larger amount of hippuric acid.

FIG. 18.



(a), (b), and (c), hippuric acid (Hoffman), (a) being about one-third larger than the natural size. (d) and (e) hippuric acid (Schmidt.)

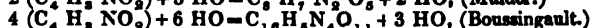
The composition of this acid is represented by the formula $C_{10}H_8NO_5 + HO$, corresponding to the numbers—

Carbon . . .	60.76
Hydrogen . . .	4.92
Nitrogen . . .	7.82
Oxygen . . .	26.50

Oxidizing agents convert hippuric into benzoic acid, and a similar change occurs in the urine if kept for any time. Conversely, benzoic and cinnamic acids are converted in the organism into hippuric acid. This connection between hippuric and benzoic acids has been singularly illustrated by the late

researches of Dessaignes*, who finds that when hippuric acid yields benzoic acid the remaining elements unite to form sugar of gelatin, or glycocoll, which remains in combination with the acid used for effecting the transformation—sulphuric, hydrochloric, nitric, or oxalic.

If, from the formula for hippuric acid ($C_{10}H_8NO_5 + HO$), we subtract that for hydrated benzoic acid ($C_7H_6O_3 + HO$), we obtain the formula $C_3H_2NO_2$, and on adding water this yields the formula for glycocoll, whether we adopt the views of Mulder, Boussingault, or Laurent.



The glycocoll thus obtained has been carefully examined in the Giessen Laboratory, by Horsford*.

Hippuric acid will sometimes crystallise in long prisms resembling those of urea. Should a difficulty arise from this source, a drop or two of nitric acid would readily solve it; the same test would also distinguish it from uric acid, by the absence of the pink tint characteristic of the latter substance.

Uric or xanthic oxide is a substance of such extremely rare occurrence in the organism that we may venture to pass it over entirely, and proceed to

Cystin, which is an occasional constituent of urinary calculi, and is sometimes found as a crystalline deposit in the urine. It may be obtained by dissolving a portion of one of these calculi in caustic potash, and adding acetic acid to the boiling solution. As the fluid slowly cools the cystin separates in six-sided, colourless, transparent scales. It may

be obtained in regular six-sided prisms from a solution in caustic ammonia if allowed to evaporate slowly.—(See fig. 19, next page.)

The composition of cystin is expressed by the formula $C_8H_8NO_4S_2$, which corresponds with the numbers—

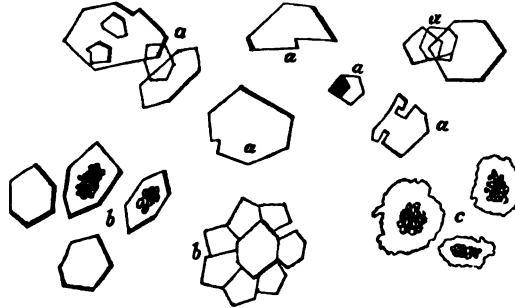
Carbon . . .	30.31
Hydrogen . . .	4.94
Nitrogen . . .	11.70
Oxygen . . .	26.47
Sulphur . . .	26.58

This formula gives rather too large a quantity of sulphur, the amount actually found being 25.5 per cent. Cystin has neither an acid nor an alkaline reaction; when heated it does not melt, but takes fire with a bluish flame, and gives off a very characteristic odour. It is very slightly soluble in water, and quite insoluble in alcohol; it dissolves in dilute sulphuric, nitric, hydrochloric, phosphoric, and oxalic acids, the saturated solutions yielding, on gentle evaporation, salt-like compounds of

* Annales de Chimie et de Physique, 3e série, t. 17, p. 50.

* Liebig u. Wöhler's Annalen, vol. ix. p. 1.

FIG. 19.



- (a) Pure cystin crystallised from an ammoniacal solution.
 (b) Cystin yielded by the rapid evaporation of the ammoniacal solution (Bird.)
 (c) Cystin as it frequently occurs in urinary sediments (Bird.)

cystin and the acid; these compounds separate in diverging crystalline needles, which have an acid taste and are not very durable. Cystin dissolves readily in the fixed alkalies, and forms, on evaporation, granular crystals. It dissolves in caustic ammonia, but does not combine with it. Carbonate of ammonia is the best reagent for throwing it down from an acid solution, as it does not dissolve cystin. It may be removed from an alkaline solution by acetic, citric, or tartaric acid, with none of which it enters into combination. Acetic acid is generally used.

It may be recognised by the peculiar crystalline forms in which it separates from its solution, by its insolubility in water and alcohol, and by its behaviour towards acids.

I have now brought to a close my remarks on the general chemical characters of the nitrogenous organic constituents of the animal body and its fluids. When we next meet we shall take into consideration the non-nitrogenous constituents—the sugars, fats, and certain acids, and thus conclude the introductory portion of the course.

Original Communications.

ON

MORBID SYMPATHIES;

OR THOSE ASSOCIATED STATES OF DISORDER WHICH MOST FREQUENTLY PRESENT THEMSELVES TO THE PHYSICIAN.

Being the Croonian Lectures delivered at the Royal College of Physicians in March and April, 1846.

BY JAMES COPLAND, M.D. F.R.S. &c.

[Continued from p. 544.]

I now proceed to consider the *first class*, or associated sympathies or affections of the digestive or assimilative organs. These organs, you are aware, are most important as respects vitality; they are observed throughout the animal kingdom, and, as being intimately connected with the origin and perpetuation of life, demand our

more immediate consideration. The sympathies, or associated states of digestion and assimilation, are to be referred—*first*, to the circumstance of these organs being supplied with the same system or order of nerves—the ganglial,—and, even according to the view I have suggested, of these nerves partly originating in the villous surfaces and parenchyma of these organs, as shown by the microscope—by the presence of the organic nervous corpuscles, and their incipient arrangement into fibres, The circumstance of the organic or soft nervous fibres originating here, taken in connection with others, serves to shew, or at least goes far to explain the fact, that disorders affecting these organs, especially the alimentary canal, affect more or less distant parts, remote organs or parts thereby sympathising with them. *Secondly*, to the similarity and continuity of structure existing through a large portion of the organs, particularly the digestive canal. *Thirdly*, to the contiguity of their position. *Fourthly*, to the association

of function and normal action. *Fifthly*, to the several vascular connections existing between them. Thus it is not through one channel only that these associations are kept up, for no less than five may be considered as contributing to the several states of morbid sympathies or associations which the digestive and assimilative organs present in practice.

First, the associations of the morbid states of the organs of digestion and assimilation with each other, are amongst the most frequent and prominent in the human economy. When we view the intimate connections existing between the digestive canal and its allied viscera, especially the liver and pancreas, by means of the splanchnic ganglia, plexuses, and ramifications, and of the vascular system, the frequency of these morbid associations cannot remain a matter of surprise. When we consider the relations of the portal circulation, and view it (as it really is) as independent, in a great measure, of the action of the heart,—indeed, so much so as that the return of blood from the liver is much more under the control of the heart than the supply of blood to the organ by the portal vein,—or, in other words, that the return of blood from the hepatic vein is owing more to the action of the heart, than the circulation through the portal system is owing to this organ,—we must necessarily infer the operation of some other agency in carrying on this circulation. Now, the capsule of Glisson, and the ganglial nerves, with which both it and the portal vein is provided, are in my opinion the chief agents of this important and independent circulation,—agents which operate through the medium of their distributions throughout the organ along with this vein, and which influence not only the circulation of it, but also the circulation of the bile along the ducts. That this capsule contributes at least to, if it does not entirely discharge, this function, may be inferred from its organisation; for it is abundantly supplied with ganglial corpuscles and fibrils, and it may therefore be considered as exercising important vital functions. When, therefore, we reflect upon the nervous and vascular connections of the digestive organs, we must admit that affections of one of the series will be readily

propagated to others, and that disorder of the functions of one will necessarily disorder more or less the rest. We frequently observe in practice that disorders of the stomach or bowels impede or otherwise affect the functions of the liver, and that torpor, obstructions, congestions, or other disorders of this organ, are followed by affections of the stomach, by congestions of the digestive mucous surface, and, indeed, of all the vessels which combine to form the portal system; and you have, as more remote consequences, when the original mischief remains, increased exhalations, hæmorrhages, and even serous effusion into the peritoneal cavity.

Morbid states of the intestinal canal also remarkably affect the functions of the liver, through the medium of the splanchnic nerves, and by influencing the states of the portal system. Irritation of the mucous surface of the intestines, especially of the duodenum and jejunum, is readily propagated to the portal system, and this effect is the most rapidly developed in warm climates, where active determination of blood to this organ, and congestive and other forms of inflammation of it, are thus observed frequently to supervene. The intimate connection subsisting between these organs pathologically is evinced also in fevers; and in these, both in the mode just adverted to, and in another of a different kind. In the course of fevers, hæmorrhages from the digestive mucous surface are not infrequent occurrences, and are most unfavourable as respects the vascular system generally, the portal circulation, and the vital powers. In yellow or hæmagastric fever, a fatal termination is generally by black vomit, which is chiefly the blood which has exuded from the mucous surface of the stomach, and often to such an extent as to present the liver of a pale yellow colour, or altogether bloodless, upon dissection. In these cases, the blood, instead of being carried into the portal vein, is exuded from the digestive mucous surface, leaving the liver in a state of anæmia especially as regards this vein.

Contiguity or proximity of position has a great effect in complicating diseases of the digestive organs. This is evidenced by inflammations and inflammatory fevers, more especially when the serous surface of either of these organs is affected. Owing to

contiguity, the inflammation is rapidly propagated from one surface to another, not so much by continuity of surface as by contiguity of position. When making post-mortem examinations, I have often found that the opposite surfaces of different organs had become inflamed; that lymph had been thrown out from both, at the place of contact, and yet the intervening portion of surface, where contact did not exist, presented no change,—that is to say, the inflammation was not propagated by continuity, but by the contact of opposite surfaces: the lymph thrown out from the primarily inflamed surface had acted as an irritant to the vessels of the opposite part with which it came in contact, and given rise to inflammation; adhesions, &c., being the consequences.

Owing to continuity of surface and similarity of structure, disease extends—more especially erythematic or asthenic inflammations—along the mucous and serous surfaces, varying in severity in different viscera or situations. Thus inflammations extend not only downwards, but also upwards,—from the stomach to the intestines,—from the cæcum to the colon and rectum,—from the stomach to the œsophagus, pharynx, and fauces. Irritations or inflammations of the mucous surface of the duodenum may extend to the mucous surface covering the ducts, especially in weak or cachectic constitutions, in which this extension is most likely to occur; the spread of inflammatory action being most likely to take place in debilitated and cachectic persons, producing inflammation of the ducts, and even of the viscera from which these ducts proceed.

The state of the muscular tunics of the digestive canal frequently gives rise to important sympathetic phenomena. When the colon is much distended with flatus, or irritated by sordes or morbid secretions, or accumulated fecal matters, various changes occur, not only in the portion of the canal above the constriction, but also in other parts in the vicinity. I have pointed out already, that, owing to the nervous communication subsisting between the intestinal canal, the splanchnic ganglia, and the spinal nerves, numerous disorders arise, especially pain in the joints, and various spasmodic affections. I merely refer you to the very common phenomena of spasms of

the limbs and lower extremities occurring in bilious colic or in common cholera, and in poisoning by corrosive or irritating substances.

When the circulation is interrupted through the liver, the digestive canal becomes materially affected; and, when the latter is deranged, then the former becomes disordered, and the portal circulation is also more or less deranged. Not only are the functions of the digestive canal thus mutually disturbed in a very remarkable manner, but these disturbances also affect materially the urinary excretion and the kidneys. When the chyle is not sufficiently assimilated, or the ingesta is of a character likely to produce inordinate excitement or other derangement of the vascular system, there will be not only associated affections of the liver through the portal system, but also, in consequence of the morbid changes taking place in the blood, further changes more or less extensive will occur in the urinary excretion and organs, particularly in the kidneys. When individuals are otherwise in health, and the kidneys are enabled by nervous power to execute their functions, morbid matters carried into the blood are readily eliminated from it by these organs, producing various changes in the urinary excretion; but when the vital powers are weak, either from lesion of the spinal cord or nerves, or of the ganglia supplying those organs, or from general nervous depression or exhaustion, then there will be observed more or less serious disorder of the urine, or even of the kidneys themselves. I shall have hereafter more particular occasion to refer to these states of disorder, especially in connection with the circulating fluids, particularly the blood.

Even in comparative health we find a very intimate connection existing between the states of other excreting organs and the kidneys. For instance, when the functions of the kidneys are but temporarily obstructed, the blood to a certain degree becomes impure, and very important and deleterious elements, which should have been eliminated from the blood by these channels, are removed by other emunctories, the circulation being the while often more or less disordered. Again, when the function of the cutaneous surface is materially deranged,—when it is suppressed,—if the individual is

otherwise healthy,—if there is no disorder connected with the urinary organs,—these organs will perform an increased function, and matters which should have been carried out of the system by the skin, will be removed by the kidneys, and often no severe disorder will arise; but not unfrequently serious derangements take place, owing to the want of the due performance of the cutaneous function. Thus disease of the skin, or suppression of its function, or disorder of the urinary functions, often produces a number of morbid actions,—often at first of vicariously-increased action of the one emunctory, as the action of the other is impaired or obstructed, and subsequently very serious changes, both of the blood, and of vital organs and parts.

The most serious and rapid derangements are produced in the circulating fluids, and consecutively in other parts of the economy, by impeded or obstructed function of the kidneys. In all organic lesions of these organs, especially in that which is called "Bright's disease," very important changes take place in the circulation; and, owing to these, further changes are produced in distant and different parts of the economy: for instance, the heart and the liver, the mucous and the serous membranes, owing to the state of the blood, and more particularly to the circulation of effete or injurious elements in it, become irritated; and organic changes, such as asthenic or spreading inflammation, the exudation of lymph, and more frequently of a serous or albuminous fluid, take place on the surfaces of these organs and of these membranes.

Again, in connection with disorder of the digestive organs, you very frequently find the appearance of the skin more or less changed, even independently of the actual presence of jaundice. It would appear that, when the liver is torpid or inactive, or when affections of the liver are connected with disorder of the stomach and bowels, that the blood becomes more or less impure, and consequently the external surface, and the countenance, more or less sallow, lurid, or deficient in the vital glow of health. You are aware that the liver performs not only secreting but excreting functions: that is to say, it carries out or eliminates certain

elements which, if allowed to remain, would produce more or less disorder,—that it thus depurates the blood to some extent; and hence we accordingly find that in torpid affections of the liver these elements accumulate in the blood, and, independently of true jaundice, produce slight pseudo-jaundice, a muddy state of the skin and countenance, which is attributable to the impaired excretion of materials which usually go to the formation of bile. But in cases of jaundice where the obstruction is more serious, owing to the excretion of bile from the liver being impeded or prevented, or to the presence of calculi in the ducts or in the gall-bladder, or to numerous organic changes that take place in the organ, there are certain constituents of the bile absorbed into the circulation, and these are more abundant in some cases than in others. In some instances the colouring matter only is present, whilst in others the resinous portion of the bile, or the *bilin* of modern chemists, may be carried into the circulation. It is very rarely that any portion of bile can be detected in the blood itself, but it has been detected in the urine; and we may therefore infer that it must have passed through the circulation before it arrived there, and that the kidneys, by the active discharge of their functions, have carried it out before it could accumulate in the blood so as to enable the chemist to detect it by the taste of the blood or by the usual tests.

I have already adverted to the effect of congestion, or interrupted circulation in the liver, on the abdominal organs generally, especially upon the digestive canal. I believe that this circumstance is not sufficiently attended to, as producing very serious disorders, particularly those so frequent in malarious and warm climates.

[To be continued.]

POISONING BY IODINE.

At the last annual meeting of the Suffolk branch of the Provincial Medical and Surgical Association, Mr. Smith detailed some very interesting cases of the bad effects resulting where iodine had been exhibited carelessly for a lengthened period, and he believed that this iodism was frequently the cause of very serious and fatal results. In these cases there was headache, dizziness, &c., which were relieved by expelling the iodine by emetics, and giving brisk aperients. —*Prov. Med. and Surg. Journal.*

ON THE
PATHOLOGY AND TREATMENT OF
HYSTERIA.

BY JAMES MILMAN COLEY, M.D.

Physician to the Western Dispensary, and Senior
Physician to the Royal Pimlico Dispensary
and Lying-in Institution.

[Concluded from page 589.]

CASE VI.—May 31, 1831, a gentleman, *æt.* 45, consulted me respecting a troublesome borborygmus, accompanied with extreme depression of spirits and a sense of suffocation, which was much increased when he attempted to take food, or even to swallow liquids. He complained also of palpitation of the heart, and the choking sensation was so distressing, that he refused to attempt to swallow any thing during two days. The tongue was coated with a thick white fur, and he had other symptoms of gastric derangement excited by intemperance.

In some cases temporary tumors within the abdomen are produced by a partial distension of the colon. In these instances the irregular muscular movements, described as proceeding from convulsive contraction of the abdominal muscles, are absent. In the sixth number of *Guy's Hospital Reports*, p. 257, one of these hysterical tumors is described as having been mistaken for a cyst; and the mistake was not discovered until an opening was made through the parietes of the abdomen, for the purpose of its being removed.

Treatment.—When hysteria is accompanied with epilepsy or temporary hemiplegia, or other symptoms of cerebral disease, and the patient is plethoric, leeches should be applied to one of the temples, or blood should be removed by cupping between the shoulders. This combination of epilepsy with hysteria is not uncommon in young women of full habit, when menstruation is delayed beyond the usual period of its appearance; and there is danger of the periodical recurrence of the attack as long as the temporary plethora is permitted to continue. In this condition, and in this form of hysteria, in which the cerebral symptoms predominate, the exhibition of steel

should be strictly prohibited. Unfortunately the custom of administering chalybeate medicines without medical advice, and without proper discrimination of the cases adapted for their use, is often followed by confirmed epilepsy, which sometimes continues through life.

CASE VII.—A young lady was attacked with a most violent fit of epilepsy, which followed a paroxysm of hysteria. She was about 17 years of age, of full habit, and had a florid complexion. I found on inquiry that she had never menstruated, and had been taking for a considerable time large doses of steel. I directed twelve leeches to be immediately applied to the temples, a purging medicine to be given, and the steel to be entirely discontinued. The cerebral symptoms were by this timely depletion removed and the menstrual secretion soon followed.

In these cases of cerebral hysteria, partaking so decidedly of the nature of epilepsy, when local bleeding is found ineffectual, much benefit may be derived from the exhibition of digitalis, in the dose of two grains twice a day, and the counter-irritation of a blister applied to the nape of the neck. The digitalis in these cases acts beneficially, as in epilepsy, by retarding the cerebral circulation.

CASE VIII.—May 28th, 1847.—A young lady, *æt.* 16, had been afflicted, almost daily, with hysteria in various forms during the preceding six months. She was of a lymphatic temperament, and inclined to plethora, and presented the appearance of a person predisposed to epilepsy. She was subject to attacks of sudden and vehement palpitation of the heart, during which, the pulsations of that organ, perceptible to the hand placed over the cardiac region, were twice as rapid as the pulse at the wrist. She was also often seized with involuntary twitching of the muscles of the upper eyelids, temporary loss of sight, globus hystericus, fits of laughing, crying, and sobbing, and paralysis of the left leg, which continued some time after the paroxysm had subsided; the menstrual discharge was regular. The head has not been observed to be drawn to one side, but the patient has often made a moaning noise, and foamed at the mouth, like an epileptic person, during

the fit. She passes a quantity of pale urine after the attack.

Mr. Ince, the medical gentleman who was attending the patient, and favoured me with this history, requested me to visit her in consultation with him.

I prescribed twelve leeches to the temples, and the following medicines:—R. Extr. Belladonnæ, gr. v.; Ferri Oxydi, ʒiss.; Extr. Gentian. ʒj. M. ft. Pil. xxiv. cap. iv. octavis horis, C. cochl. ii. largis mist. seq.; R. Rhei Pulv. ʒj.; Tinct. Aurant. ʒii; Infus. Quass. ʒvj. M.

31st.—Mr. Ince informed me that the patient was rapidly improving.

June 4th.—She has had no return of the fits, and the double pulsation in the heart has ceased. R. Extr. Belladonnæ gr. x.; Pulv. Lini, gr. x. M. ft.; Pil. xii. cap. j. octavis horis cum cochl. ii. largis seq.; R. Ferri Oxydi, ʒiss.; T. Aurant. ʒii; Rhei, ʒj.; Infus. Quass. ʒvj. M.

10th.—Mr. Ince being engaged, I was requested to visit the patient in his absence. I found her suffering a severe attack of cerebral hysteria, which was preceded by rigors, and partook more of the nature of epilepsy than hysteria. Neither the spinal nor the ganglionic nerves were affected, except the former in a slight degree, in consequence of which, occasional gentle convulsions were produced in the muscles of the arms, which were moved as if by a galvanic shock; the flexor muscles of the fore-arm being at the same time firmly contracted. The patient lay in a state of stupor and insensibility during more than an hour, now and then foaming at the mouth. The forehead felt very hot, and the face was flushed, while the extremities were cold; the eyes were closed; there was no return of palpitation of the heart.

I prescribed the following medicines, and a repetition of the leeches, which I afterwards found were not applied, on account of an insurmountable objection which the patient had to loss of blood:—Digitalis Pulv. gr. xvj.; Saponis, ʒj. M. f. Pil. xvj.; cap. ii. bis die, c. cochl. ii. largis mist. seq.; R. Ammon. Sesquicarb. ʒss.; Tinct. Aurant. ʒiii; Inf. Quass. ʒviiss. M.

Mr. Ince, when he afterwards saw the patient, and was informed that she had neglected to apply the leeches, re-

commended the application of a blister to the nape of the neck, which had formerly afforded considerable relief, and which he directed to be kept open.

24th.—The patient has not had hysteria in any form, except slight attacks of cerebral congestion resembling epilepsy. The medicines last prescribed have been regularly continued, but the pulse is not perceptibly under the influence of the digitalis.

September 4th.—Has omitted the digitalis for some time, and, I find, has seldom any attack, and when she has, it is trifling and transitory.

When the patient is feeble and emaciated, and the countenance pale and contracted, instead of being flushed, as in the variety just described, the most safe and efficient practice is to administer an emetic as soon as the patient has recovered the faculty of deglutition. The depression of the heart's action, and the general perspiration produced by the emetic, have the effect of restoring the balance of the circulation, and relieving the brain from the temporary compression produced by its congested vessels.

The convulsions in the voluntary muscles, which are the most troublesome and alarming symptoms to the attendants, are speedily and effectually removed by the exhibition of belladonna, which has also the effect of removing the disordered function of the nerves of sensation. As this successful mode of treating hysterical convulsions is, I believe, unknown to the profession, I will adduce the following cases, which have occurred in my practice at the public institutions which I attend, in corroboration of my recommendation of the remedy. The proper dose of the extract of belladonna, which is the preparation I use, is half a grain for an adult, which should be repeated once in eight or twelve hours, according to the severity of the convulsions.

CASE IX.—Mary Ann K., æt 16, was admitted under my care a patient at the Western Dispensary, on March 4th last, with cerebral hysteria; she had never menstruated. As she had a pale and delicate appearance, I prescribed steel, and afterwards digitalis, the attacks presenting a great resemblance to those of epilepsy; but the frequency and violence of the convulsions in the extremities and in the

abdominal muscles increased under treatment; so that it became necessary for several attendants to remain with her during every night until May 7, when I commenced the exhibition of extract of belladonna, which I prescribed in the dose of half a grain once in eight hours. When I saw the patient again on the 10th, I found the pupils dilated, and that she had had no return of hysteria after she had taken the first dose of the medicine. The belladonna was continued till the 20th, when it was omitted, no symptom of the disease having returned.

CASE X.—Ann B., æt. 14, was admitted under my care a patient at the Western Dispensary, on May 17th last. She had hysteria more or less every day, requiring the continued attention of her family. It appeared in the form of general convulsions, preceded by globus hystericus and convulsive respiration. As this was an unusually severe and troublesome case, I commenced the exhibition of extract of belladonna in the dose of two-thirds of a grain once in eight hours. On the 21st the belladonna was discontinued, all symptoms of the disease having subsided the day following the first exhibition of that medicine.

CASE XI.—Sarah B., æt. 25, was admitted a patient at the Western Dispensary, under my care, on May 13th. She was married, and regularly menstruated. She had been suffering every day during the preceding month with hysterical globus and convulsions. I prescribed a pill, containing half a grain of extract of belladonna, three times a day. On the 20th, finding she had had no return of the disease, I ordered the medicine to be omitted.

CASE XII.—Sus. C., æt. 14, was on May 18 admitted a patient at the Western Dispensary. This was a complicated case of cerebral and spinal hysteria, with which she had been afflicted daily during the last three years. The attack began with hysterical coma, which was succeeded by convulsions, frequently interrupted by laughing, crying, and sobbing. She had never menstruated, and had an anæmic aspect. On this account, I began the treatment with sulphate of iron, in conjunction with half a grain of extract of belladonna, twice a day. She had no return of convulsions after the second dose of the belladonna, and

the pupils in a few days became fully dilated from its use.

On the 14th of June, finding that the hysterical symptoms had subsided, and that the attacks were such as I have denominated cerebral, I directed the steel and belladonna to be omitted, and two grains of digitalis to be taken night and morning. At the end of fourteen days from this time the patient was discharged cured.

CASE XIII.—Mary H., æt. 18, was admitted a patient at the Western Dispensary on May 27th. She had been attacked almost every day during a considerable time with hysteria, complicated with epilepsy, denoted by coma, convulsions, and foaming at the mouth, interrupted by frequent fits of crying and sobbing. I prescribed a pill containing half a grain of extract of belladonna, to be taken every night and morning. On the 7th of June, the patient was perfectly free from hysteria and epilepsy, and on the 17th she was discharged cured.

CASE XIV.—Emma R., æt. 43, was admitted a patient at the Western Dispensary on June 21st. She complained of globus hystericus, and convulsive contractions in the abdominal muscles, which she called cramps. I prescribed half a grain of extract of belladonna once in twelve hours. On the 24th, the hysterical globus and muscular cramps were removed, and on July 19th the patient was discharged cured.

I am not prepared at present to explain satisfactorily the manner in which belladonna acts on the nerves of sensation and voluntary motion proceeding from the spinal column; but I apprehend that it is by producing partial enervation, or diminished supply of nervous fluid, and consequent temporary paralysis, as in the iris.

Hysteria proceeding from disordered function in the abdominal ganglionic nerves is frequently produced by constipation, which is permitted by some indolent females in the middle and upper classes of society to proceed to such an extent as to occasion an enormous accumulation in, and distension of, the colon. The consequences of this preternatural condition of the bowel are, obstruction to the return of venous blood from the intestines, and a general congestion in the abdominal viscera. The most effectual mode of

removing this stagnant collection of *feces* consists in the exhibition of pills composed of extract of jalap, compound extract of colocynth, and compound rhubarb-pill, which should be regularly repeated every second day, until the contents of the colon have been completely dislodged. In these cases saline purgatives will be found of no avail, as they fail to produce that contraction in the large intestines which is indispensable to insure their perfect evacuation.

When hysteria is combined with pyrosis, the cure of the former will often be found to succeed that of the latter, which is most successfully treated by trisnitrate of bismuth in conjunction with a bitter infusion.

A state of anæmia is another very common cause of this form of hysteria, as well as of *clavus hystericus*, and other varieties of neuralgia and of morbid sensibility in the nerves of sensation. This condition of the blood, with which there are found a deficiency of red globules, and a corresponding enervation in the vital organs, is that which induces hysteria in males; and, by depriving the uterine vessels of their natural energy, is the cause of that species of chlorosis in females which is curable by *chalybeates*. Whenever neuralgia is connected with anæmia, it will be found that the latter has preceded the former, and that the most successful treatment will consist in the exhibition of some preparation of steel, which, by restoring the healthy proportions of the elements of the blood, has the effect of removing that combination of anæmia and enervation which is essential to the generation of this kind of nerve-ache. In some cases this simultaneous deficiency of red globules in the blood, and of nervous energy in the vascular system, proceeds to such an extent as to produce passive congestion in the viscera of the thorax and abdomen, and consequent effusion of serum in the cellular membrane of the face and extremities.

47, Chester Square,
Sept. 13, 1847.

THE HEPATIC AFFERENT VESSEL.

By J. JACKSON, Esq.

THE third, or systemic afferent vessel, *i. e.* the vessel which takes the blood to the systemic capillaries, is an artery—the aorta and its ramifications, to which is prefixed a heart—the left auricle and ventricle; and the second, or pulmonic afferent vessel, *i. e.*, the vessel which takes the blood to the pulmonic arteries, is also an artery—the pulmonary and its ramifications, to which is also prefixed a heart—the right auricle and ventricle; but the first, or hepatic afferent vessel, *i. e.*, the vessel which takes the blood to the hepatic capillaries, is not an artery, but a vein—the splenic and portal vein and its ramifications, and has prefixed to it not a heart but a spleen. Now if this vein, in the middle of which the mesenteric veins terminate—which veins convey from the alimentary tube not merely the blood supplied to it by the gastro-intestinal arteries, but the food eaten and the fluids drank, both of which are imbibed, not by the lacteals, but by the gastro-intestinal capillaries—if this vein were an artery, like the pulmonary or the aorta, and had prefixed to it, in lieu of a spleen, a heart, *i. e.*, an auricle and ventricle, in the former of which (the auricle) the mesenteric veins terminated, the hepatic afferent vessels would be similar to the pulmonic and systemic afferent vessels, and would, therefore, cause a similar kind of motion of the blood through the hepatic capillaries to that which they cause through the pulmonic and systemic capillaries, *i. e.*, a constant and rapid motion. But the hepatic afferent vessel is not similar to, but different from the pulmonic and systemic afferent vessels; from which fact—and a most significant and important fact it is—what are we to infer? That the hepatic afferent vessel causes *no motion* at all of the blood through the hepatic capillaries? Or that the motion of the blood through those capillaries is caused by the *systemic* afferent vessel? Or that the hepatic afferent vessel

causes a *similar* kind of motion of the blood, through the hepatic capillaries, to that caused by the pulmonic and systemic afferent vessels through the pulmonic and systemic capillaries? Certainly not. The natural inference is, that as the hepatic afferent vessel is different from the pulmonic and systemic afferent vessels, it causes a different kind of motion of the blood through the hepatic capillaries to that which they cause through the pulmonic and systemic capillaries; and, that as the latter motion is *constant* and *rapid*, the former is *intermittent* and *slow*. Now if this hepatic afferent vessel, consisting of a spleen and vein, be (and I think it quite evident that it is) as perfectly adapted for effecting an intermittent and slow motion of the blood through the hepatic capillaries, as the pulmonic afferent vessel, consisting of a heart and artery, is for effecting a constant and rapid motion of the blood through the pulmonic capillaries, or as the systemic afferent vessel, consisting of a heart and artery, is for effecting a constant and rapid motion of the blood through the systemic capillaries—what sort of a doctrine of circulation is that which we have been worshipping for the last two centuries—which teaches that the heart is the only organ subservient to the motion of the blood—which recognizes only two vascular systems—a lesser or pulmonic, and a greater or systemic—and which explains the function of the second or pulmonic, and of the third or systemic afferent vessel, but not that of the first or hepatic?

Long Clawson, Leicestershire,
Sept. 17, 1847.

ON THE OCCURRENCE OF A TRIPLE CENTRAL INCISOR TOOTH.

By J. CHITTY CLENDON,
Dentist to the Westminster Hospital.

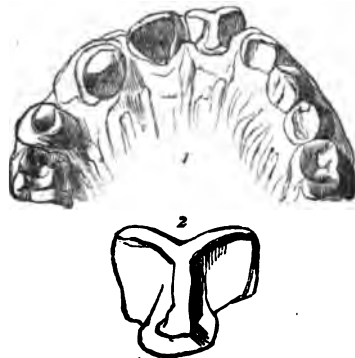
I WAS recently applied to by the friends of a little boy, ten years of age, as to the propriety of removing "a double tooth growing in the front of the mouth." Upon examination, I found, as I expected, this description to be incorrect. It was, in fact, a *permanent central incisor*, occupying

its usual position in the dental arch, but of a very peculiar form.

The body of the tooth, which has protruded through the gum to its usual extent, consists of three irregular triangular portions closely united; the cutting edges describing a figure which resembles as nearly as possible the Egyptian letter Y.

It is quite sound and healthy-looking, of a good colour, with the enamel perfect, and continuous over the whole surface of the tooth. When the mouth is closed the antagonist tooth bites upon the stem or shoulder, where it has already worn a slight groove; indeed, it is easy to foresee that both teeth must eventually suffer from the friction to which they are so constantly exposed. The remaining teeth, deciduous and permanent, present no peculiar feature, either in their form or arrangement.

Supernumerary teeth, of strange and fantastic shapes, and molar teeth with an additional number of tubercles and fangs, are occasionally met with, but I have never previously seen nor heard of an incisor tooth at all resembling the one I have now described.



1. The tooth in situ—three-fourths the actual size.
2. The tooth isolated and enlarged, to show the form more distinctly.

It is scarcely necessary for me to add, that, as the front view of the tooth causes but a trifling disfigurement, I enjoined the necessity of allowing it to remain undisturbed in its present position.

Conduit Street, September 1847.

OBSERVATIONS ON STRANGULATED HERNIA.

By JAMES ALLEN, M.R.C.S.

SHOULD the following general remarks on hernia be deemed of sufficient importance, you would oblige by giving them a place in your journal. The views here taken are in some respects new, yet I should not consider them worthy of publication did they not involve a practice I have found successful.

On the subject of hernia so much has been said and written, that I should not presume to question long-received opinions, or hazard solutions of some of the phenomena which are in opposition to commonly-received explanations; but apparent truths, proved by experiment, seem to justify the course I have adopted; and I hope that some individual may test the practice, and examine the data on which it is recommended.

The points to which I am anxious more particularly to direct attention and to invite examination are, the circumstances causing strangulation, and the laws on which incarceration depends, with the principles on which remedies succeed; for I conceive these have not generally been duly apprehended, otherwise we should not find efforts so constantly made without reference to the particular pathological conditions on which strangulation depends. Few writers, and these very briefly, allude to the changes which induce and constitute incarceration. True, Teale says—"Tumefaction of the protruded parts, rendering them too large to repass the opening by which they descended, is the immediate cause of strangulation." Yet we have not the investigation how this enlargement is effected, or what are the changes when the volume diminishes; and until we have a more correct idea of the various transitions, we shall not arrive at the best mode of practice. To attempt some solution is my present object, as well as to show in what consists an improved practice.

It is evident that the interruption to the circulation caused by the pressure of the neck of the hernial sac, must, according to the degree of stricture, destroy the equilibrium between the

arteries and the veins, and cause accumulation in the protruded part, either on the arterial or venous side, the intermediate capillaries, or surrounding cellular tissues, or all; but, judging from analogy, the accumulation is most probably on the venous side. The secondary effects of this pressure are, we know, sympathetic derangement, pain, heat, and inflammation, with its sequences.

Now the treatment should be founded on judicious discrimination as to what may be ascribed to each of these conditions, and the remedies applied accordingly: hence, to confound what relieves impeded circulation with what lessens inflammation, is to commit an error that would mystify the case, and this is by no means uncommon: again, to confound what reduces the tumefaction with dilatation of the constricted part, is sure to be productive of wrong conclusions; and hence I think that most of the remedies said to be valuable are recommended on a wrong theory, while the practice is occasionally successful. This I conceive the great mistake; for, on consulting our best authorities, we hear of bleeding, warm baths, tobacco, &c. as producing *relaxation*, and thus answering the desired end.

Now I am at issue with this conclusion, and give as my reason, that the strictured part cannot be relaxed by such means. Lawrence says—"the exit of ruptures from the abdomen is by an opening which is in most cases tendinous, and therefore unyielding." Teale remarks—"That the strictures immediately surrounding the seat of constriction perform, in most instances, a merely passive part, in consequence of their being inelastic, noncontractile, and, I might add, inextensible." Therefore I conclude these remedies do not act by relaxation of the ring. It is readily acknowledged that muscular textures are so influenced by such means, but it is with me questionable whether they form any material obstacles to the return of hernia. Many place their patients in such a position for the taxis as that the muscles may be relaxed; and it is a fact that some have failed with relaxation while they have succeeded with tension; hence M. Lisfranc recommends tension that the ring may be stretched.

It appears to me that the circumstances of these conditions are not reconcilable with the notion of relaxation, and I contend that the solution does not depend on such a condition, but is clearly owing to some process whereby not the ring is enlarged or relaxed, but the tumefaction is lessened, and then enabled to be returned.

Now, for example, let us examine the remedy which, by common consent, is considered the most potent—tobacco: this palpably soon reduces the heart's action, and, necessarily, less blood is sent to the capillaries; besides, like all such medicines, it has a tendency to cause great congestion on the right side of the heart; the venous side of the incarcerated hernia becomes emptied, failing to be again supplied by the arteries, the equilibrium is partially restored, the tumefaction lessens, and the hernia is returned. Again, the warm bath; the first tendency of this is to excite the capillaries in the tumor, and thus partially to restore the disturbed equilibrium; and, when continued, it diminishes the action of the heart and produces faintness, whereby the venous congestion in the tumor is relieved, less is conveyed by the arteries, and diminution of the volume of the constricted viscera is the consequence, so that return is often easy.

Even the taxis itself is not successful on the absurd notion of some, that by long and steady pressure you fatigue and overcome muscular contraction, but evidently by resisting increased entrance of blood into the protruded portion, and partially emptying the overloaded vessels, again reducing the size of the tumor by which return is effected.

Therefore, what appears to me as indicated by such a view of the subject, without entering into all the modifying circumstances, is, the adoption of such measures as tend to equalize the circulation, contract the vessels, and thus lessen the tumefaction, besides moderating other aggravating conditions, as inflammation, &c., and so apply your means to specific objects. Before the taxis is much tried, an attempt should be made to correct the faulty circulation; and if inflammation be present, it should be subdued before much force is employed to lessen the tumor and overcome the resistance.

While I would acknowledge that much has been done, I still consider that no practice can ever be so successful as when founded on a correct theory. Now, in addition to what has proved beneficial, I would respectfully suggest a plan which I deem highly useful, though new, as in the worst cases, I have seen it succeed: it is this—when the strangulation is such as to resist the efforts of the patient and a moderate attempt by the taxis, cautiously to apply to the part fomentations, at about the temperature of the surface, and the degree of heat to be progressively increased as high as the patient can tolerate; then the heat to be gradually reduced until the applications are quite cold, which should be persevered in for half an hour, or even an hour. If the hernial tumor is not sufficiently reduced in volume to be easily returned, the parts must be submitted to the same gradual exaltation and depression of temperature, the transitions from one extreme to another being so progressive that the patient is hardly sensible of each immediate alteration: the time from one extreme to the other should not be less than an hour.

That this plan does produce an astonishing reduction in the volume of the hernia when all others have failed, is a fact I am certain of, but of my theory on which the benefits depend I am not so confident, though I shall hazard one, in hopes some practitioner may rectify what is erroneous.

In considering the circulation of the capillaries generally, I perfectly agree with those physiologists who maintain that the circulation is not governed by the heart alone, and that those minute vessels, in particular, are much influenced by local forces, as well as being made to contract and dilate under the power of the nervous system;* hence, alterations often take place in their condition without corresponding action of the heart.

By the plan just advised, I imagine that the gradual increase of temperature excites the circulation of the capillaries of the protruded viscera without increasing that of the heart, and the congestion on the venous side is in some measure relieved, and thus the equilibrium is partially restored. Again,

* See Carpenter's *Physiology*, paragraphs 507, 600, 603.

the gradual diminution of temperature contracts the volume both of arteries and veins; thus preserving the equilibrium, the repetition of the process corrects any irregularity, while it preserves the equality of the circulation until the normal condition is restored: then the hernia is easily reduced by a power exerted externally, which can always overcome that which from within caused the displacement, when the dimensions are the same.

Now, while I advise this plan of gradual increase and diminution of temperature by wet applications, I would by no means be understood to disregard other accredited appliances; for I deem the warm bath, bleeding, or tobacco, may be used advantageously, yet only on the great principle that they act by relieving the oppressed circulation, and that they should be adopted for this specific object, and not on the erroneous notion of mere relaxation.

It may not be out of place here to remark, that I have long been convinced, from observations and practice, that many members of the profession, in the employment of hot and cold applications, lose sight of some of the most important laws of the animal economy. The treatment of erysipelas forms a common example. I have seen to a hot inflamed scalp cold applications suddenly and continuously applied, to the serious injury of the patient; where, if there has not been rapid convulsion, there was violent reaction set up, besides the shock given to parts already impaired in vitality: such practice is barbarous, and in defiance of all physiological and natural laws, be it sanctioned by whom it may. If diminution of the temperature of the affected part be the object, let the application be but very little below that degree, and very gradually diminished, imitating the process by which nature lowers such inflamed and heated surfaces; then, by imperceptible transitions, (as to the feelings of the patient) you may relieve the excitement of the part, and then your cold applications will be valuable; but, disregarding the shock otherwise produced, and the immediate effect of sudden abstraction of caloric on the structure concerned, you will as certainly kill your patient as heat would destroy a frost-bitten part.

Should any be sceptical of the ad-

vantages of this alternation (gradation) of warm and then cold applications to strangulated hernial protrusions, I would recommend an experiment on some case of erysipelas in the extremities, a disease of common occurrence—with this caution, that the cold application be somewhat longer in duration than the warm, but neither to the extent to give pain; and he will find that, in thus scientifically blowing hot and cold, he will obtain advantages his philosophy never dreamt of.

York, Sept. 18th, 1847.

CASE OF POISONING FROM SWALLOWING
PERCUSSION CAPS. BY T. W. FOSTER,
M.D. OF KEENE, JESSAMIN COUNTY, KY.

Not long since, I was called in great haste to attend an infant, *et.* 14 months. Upon entering the room, I was informed by the parents that they had observed their child, about two hours previous to my visit, playing with a box of percussion caps, and they supposed she had swallowed some of them, as signs of acute suffering were exhibited soon after.

The little patient appeared to be sinking very fast. The eyes had a hollow, glazed appearance; there was great heat in the epigastric region, and coldness of the extremities; there had been eight or nine discharges from the bowels in an hour, and her general aspect denoted approaching collapse. Before my arrival free emesis had been produced by some domestic remedy, yet I continued the vomiting by administering ipecac. and large draughts of warm water, (of which the patient greedily drank,) with the hope of discharging at least a portion of the offending matters. The discharges became so debilitating, however, that I threw up an injection of eight drops of laudanum, suspended in starch mucilage, and immediately afterward gave a large dose of calcined magnesia. An alkaline purgative was selected for the purpose of neutralizing any acid which might be found in the stomach or intestines, and thus prevent any chemical change in the copper. In the course of an hour the child became perfectly composed, and fell into a pleasant slumber, though it had previously suffered excruciating pain, attended with spasms. Dr. Spilman, the family-physician, now took charge of the case, and applied counter-irritation to the abdomen. On the next day four caps were discovered in the fecal matter, which were found to be devoid of their fulminating powder. The child is now enjoying very good health.—*Philadelphia Med. Examiner.*

MEDICAL GAZETTE.

FRIDAY, OCT. 8, 1847.

We elsewhere* record the death of Dr. J. O. Curran, of Dublin, who, like many other members of the profession, has fallen a victim to the malignant fever which is now committing its ravages in the sister island. There is one fact which especially calls for notice in the death of this distinguished physician. His life has been sacrificed to the rigorous performance of what he regarded as a public and a Christian duty. He was one of the first to protest against the disgraceful scale of fever-wages proposed by the Government under the name of a remuneration for medical attendance on Fever Hospitals† His conduct on this occasion shows that he was not influenced by mercenary motives; for we are informed, that, "while he spurned the degrading offer, he daily toiled, without fee or reward, in the haunts of misery and distress, to relieve suffering, and to succour the fever-stricken poor:" and in his generous efforts to rescue others, he has at length, at the early age of twenty-seven, fallen a sacrifice to the pestilence. That any man should be found who could thus give up his time, and exercise gratuitously his professional skill in the treatment of cases in which his life was constantly exposed to the greatest danger, is a fact which must surely satisfy the Government that they have taken a false step in this matter. It is not often that so great a sacrifice is made, or that the honour of the medical

profession is so sternly considered, as it has been in this instance. Unfortunately, many, from sheer necessity, have been compelled to accept the paltry stipend, which it would be an abuse of language to call *remuneration*.* If medical men consulted their own interests with the same scrupulous regard as members of the law, they would simply decline to act in any public capacity unless they received a proper remuneration for their services: or, if they gave their time, they would consider themselves justified in refusing to undertake any service which exposed their lives to danger. On this ground, we trust that, should any near relative be left to suffer from this noble self-sacrifice on the part of Dr. Curran and other members of the profession, who, like him, have been cut off by this terrible pestilence, our Government will at least have the liberality so to provide for their pecuniary interests, that their sorrow may

* Remuneration is considered to be a higher species of *compensation*. It is a matter of *equity* dependent upon a principle of honour in those who make it! A mechanic is barely compensated by giving him five shillings a day for his bodily labour. A medical officer of an Irish Fever dispensary is said to be remunerated by the payment of a like amount of wages, although the services, mental and bodily, are of a much more arduous kind, and involve an enormous risk of life! We should be glad to know where is "the equity" of such a proceeding, or the "principle of honour" by which it is regulated!

Since our former remarks upon this subject, we have seen it somewhere argued that Irish medical practitioners should be contented with bricklayers' wages, because English Poor-law medical officers have a larger amount of work, and are not so well paid! This is strange logic! We have never yet met with a man who was bold enough to say that the salary awarded to the medical officer of an English Poor-law Union was either a just, proper, or sufficient remuneration for the medical services rendered. Therefore, instead of this being an argument to silence Irish practitioners, it works the other way; since it shows that the tyrannous exactions of Government are more widely spread through the empire than the Irish remonstrance represented, and that the necessity for some immediate revision of the salaries attached to Government medical offices, is all the more urgently required! An Irish pauper, dying of starvation, can neither be consoled nor satisfied by being told that English paupers occasionally die from the same cause in the streets of the great metropolis! Nor does the fact of an English practitioner being badly paid, prove that an Irish practitioner is sufficiently remunerated!

* Page 641.

† Our readers will find some remarks on this subject in our numbers for July 2d, p. 27; and July 30th, p. 204.

not be heightened by the prospect of impending destitution. This appeal, which we make in behalf of all, whether Irish or English, who have fallen victims to the performance of responsible public duties, cannot surely be disregarded even by those who act on the iron rules of political economy. If the granting of pensions to the widows and children of men who fall in battle be equitable, it appears to us that it is even more urgently demanded when, without remuneration, or prospect of promotion, a medical practitioner sacrifices his own life, either to prevent the spreading of a pestilence, or to mitigate its horrors.

The fate of Dr. Curran and of numerous other Irish practitioners, reminds us that we have too long delayed to notice an interesting paper by Drs. Cusack and Stokes, which appeared in the August number of the Dublin Quarterly Journal, "*On the Mortality of Medical Practitioners from Fever in Ireland.*" A few extracts from this paper will place the matter in a clear light before our readers, and show that the Government cannot escape from one of two modes of proceeding:—1. To adopt a more liberal scale of remuneration for medical attendance on Fever-hospitals and Dispensaries,—including some provision for the widows and children of those who have lost their lives in the public service; or 2d, to leave matters as they are at present, and thus lead to the uncharitable inference that the State has a right to be served by medical officers upon its own terms, and that these officers are morally bound to sacrifice their lives, and leave their wives and families dependent on the casual charity of the public! Is the latter course that which should be taken by the Ministers of a nation, the laws of which profess to deal out justice to all sections of the

community? Men with the slightest spark of charitable feeling, and who are open to conviction by reason, must perceive that such a mode of dealing with the medical profession, is wholly indefensible. Whether we regard it in a religious, moral, or equitable view, it will not bear the least examination; and were the members of the profession actuated by the same parsimonious feelings as those which now appear to influence the conduct of Government, it is probable that the fever would take its course unchecked, and decimate the population of these islands!

Drs. Cusack and Stokes first direct attention to the general prevalence of fever in Ireland.

"It is an admitted fact that, from whatever cause, or combination of causes, it may arise, Ireland has, from an early period, been far more productive of continued fever than England or Scotland. Epidemics, affecting great numbers of persons, have succeeded one another at short intervals of time; and it rarely happens that the towns are free from fever, while the minor outbreaks of the disease occur continually in the rural districts. In this way Ireland may be said to be never free from fever, which, though necessarily not arising from contagion, is propagated by it in the most decided manner.

The extent to which fever exists in Ireland, and its influence on the mortality, has been strikingly shown by the returns of the late census. Mr. Wilde has given a table of the mortality from fever, and the general mortality of the province of Leinster for ten years, ending in June, 1841—a period, be it observed, not characterized by any remarkable epidemic of fever. From this it appears that, while the total mortality was 317,802, that from fever was not less than 29,821, amounting, as Dr. Graves observes, 'to a fraction less than one-tenth of the whole mortality; whereas, in London, the fever-deaths do not amount to more than one-fiftieth of the total deaths. This difference becomes more striking from considering that deaths in Dub-

kin from fever are actually double the deaths from the same cause in London. The last census made the population in London amount, I believe, to one million and a half, while that of Dublin is three hundred and sixty-two thousand.*

This is not the place to enter on the question of contagion at any length; for our purposes it is sufficient simply to state that we believe the disease to originate in combinations of causes, the exact nature of which has not been ascertained. When produced, however, whether in isolated examples or in epidemics, it is propagated by contagion, and that to a degree far more remarkable than what is observed in cholera."

We pass over the subject of contagion as a fast upon which it is unnecessary to raise any discussion, and we come to the causes which appear to account for the remarkable mortality of medical men in Ireland:—these are thus enumerated:—

"I.—The constant existence of fever in the country. II.—The frequent epidemics of the disease. III.—Its highly contagious nature. IV.—The want of ventilation and cleanliness in the houses of the poor. V.—The fatigue consequent on visiting a number of houses scattered over large and often wild districts. VI.—The moral and physical depression which the repetition of these influences is sure to produce on the practitioner, particularly when he reflects on his frequent inability to relieve the victims of want and disease by whom he is surrounded.

"The mortality of medical men in the cholera, bears no comparison to that from fever. In Ireland the number of medical men who sank from cholera was comparatively small, and, except at Sligo, there was no important loss of life among physicians. Very few students or nurses contracted the disease; and we are fully warranted in the statement that the contagion of cholera, even in its earliest outbreak, had much less intensity than that of typhus, as it permanently exists in Ireland.

"From the returns to our inquiries, when statistically arranged, we learn

that, during the twenty-five years prior to the date of the returns in 1843, 1220 practitioners were in charge of 406 medical institutions, a number very much less than in reality exists, or had existed during that period; but the error, if error there be in these as well as all the other numbers in these returns, is to be placed to the credit side of the account, for the errors have been those of omission, not of commission. It must also be remembered, that the entire 406 medical institutions from which returns were received have not existed for anything like twenty-five years; but this error is likewise to be placed to the same side of the account. Of the 1220 medical men who have occupied these situations during the period specified, 300 have died prior to 1843,—nearly one-fourth of the whole, an immense mortality, when we take into account the ages at which the deaths occurred, and consider the various other circumstances attending this calculation.

"Now, when we reflect that the nearest and most accurate approach to a general average mortality in Ireland is but one in fifty-two at all ages; and when we consider that the mortality among medical men above specified must have been chiefly spread over a period from twenty-five to fifty years of age—the usual age of medical men holding dispensaries,—it makes the mortality among this class enormous. These deaths, moreover, it must be remembered, do not include those of the apothecaries, assistants, pupils, deputies, or other constituents of the medical staff attached to these institutions; nor do these numbers include the physicians, surgeons, pupils, and apothecaries unattached to public medical institutions, hundreds of whom must have died within the period specified. Of the entire deaths, 132 died of typhus fever, or nearly in the proportion of three to seven from all causes. It is proper here to remark, that the 168 deaths from other causes, not typhus fever, include many from other contagious diseases, cholera, scarlatina, &c., also acquired in discharging the public duties attached to the institutions which these medical officers served. 568 out of the 1220 suffered from typhus fever, or forty-six per cent. of the whole; of these 568, twenty-eight had fever twice, or 1 in every 20; and

* Clinical Medicine, p. 46.

nine three times, or 1 in every 63, to speak in round numbers. As we already remarked, certainly one-half of the 406 medical institutions had not been in existence during the first twelve and a half years over which the inquiry extends; and it is evident that, by lessening the periods, the mortality must be increased: these are, however, statistical speculations, in which we would rather not indulge. The cities of Dublin, Belfast, Cork, Kilkenny, Galway, Limerick, &c. (nor, in fact, any of the large towns, such as Sligo, &c.), have not been included in these returns, which have been received from dispensary and fever hospital attendants almost entirely located in the rural districts. On this account, the returns, with few exceptions, have no reference to the mortality among the infirmity surgeons and the medical attendants in the cities and larger towns, which we know to be considerable.

"We learn from the Census of 1841, that the proportion of deaths from fever to the mortality from all causes was 1 in every 10·59, and 1 in 3·4 of the deaths of the total class of epidemic diseases; whereas the deaths from fever among the medical profession, as far, at least, as these returns enable us to judge (and it must be remembered that they necessarily omit a great number of deaths), *shew a mortality of not less than 1 in 2·29.*

"We are able, in part, to supply the omission of town mortality of medical men from Mr. Wilde's special Sanitary Report on the city of Dublin, where we find that thirty-six medical practitioners died of fever during the ten years over which the census inquiry extended; and that the average age at which death took place among the class ministering to health, and including surgeons, physicians, apothecaries, veterinary-surgeons, midwives, and nurse-tenders, was from thirty to thirty-five in males, and fifty-five to sixty in females; the entire number of deaths being 112 males and nineteen females."

We fully agree with the writers that "It is time these circumstances, for which scarcely a parallel can be found, should be known and duly considered; and the Government, while it, on the

one hand, seeks to remove the causes of the spread of fever in Ireland, should, on the other, provide that the poor and destitute man shall not receive inferior or insufficient medical assistance; and reward with no niggard hand, and encourage by every means in its power, the exertions of a class of gentlemen who, we fearlessly assert, are the best educated, the least prejudiced, the bravest, and the most philanthropic, in the community."

Reviews.

The Dublin Dissector; or, System of Practical Anatomy. By ROBERT HARRISON, M.D. M.R.I.A. F.R.C.S. I. and E., Professor of Anatomy and Surgery in the University of Dublin, &c. &c. Fifth Edition. With numerous Illustrations. 2 vols. pp. 871.

FROM its first appearance in 1827 until a very few years back, the Dublin Dissector continued to be the great anatomical authority upon which English, and, we believe, Irish, medical students placed their faith,—the companion equally of the lecture-theatre and the dissecting-room, and, not unfrequently—when occupying its wonted place of honour beneath the owner's left arm, in close proximity to the central organ of his circulation—an indication at once of his tastes and of his profession,—a truly creditable badge, but one the presence of which we are compelled to admit was often but too readily cognisable to another sense than that of sight. Latterly, however, our old friend has been compelled to give place to certain elegant-looking manuals, highly illustrated with elaborate views of cross-cuts and longitudinal sections never dreamed of in the philosophy of the straightforward anatomists of bygone times, but extremely necessary to be understood nevertheless,—works so elegant in their exterior and interior aspect, as to demand a hitherto uncalled-for inspection of the digital organs previously to their application to the hot-pressed pages: in fact, the Dublin has been for some time past entirely driven out of the field by its handsome rivals. This defeat, how-

ever, does not by any means appear to be permanent: a strong, and we trust successful, effort has been made to revive its popularity. Its author and publishers have united to render it at once as useful and as ornamental as the best and smartest of its contemporaries. By a process of fissiparous regeneration, the single volume has enlarged, and become divided into two; neat diagrams have been copiously introduced, and the author has added very largely to the contents, especially in the department of structural anatomy. We think that in this latter respect "the Dublin" is not altogether so strong as in those, its larger portions, which are devoted to general anatomy. Several of the descriptions of the minute structure of organs are either insufficient or erroneous: take, for instance, the account of the arrangement of the tunics of veins, at p. 429, where the "middle or fibrous coat" is said to "want the external elastic lamina, but possesses the two other layers of organic contractile fibres, the external circular, the internal longitudinal." Did the author ever see or dissect the internal layer of longitudinal fibres in the inferior cava, or in the branches of the portal or pulmonary veins? Most assuredly not. No such arrangement exists in any of these vessels. Mr. Harrison's description is now known to apply only to the external veins: the internal veins of the trunk have an altogether different structure.

Upon the whole, however, the new edition of the Dublin Dissector promises to regain the character which its predecessor formerly possessed, of "the student's friend." It is an elegant and valuable work. We are not aware whether its increase in size has added greatly to its price; but its division into two volumes has, we think, not by any means enhanced its convenience as a manual: such a division may probably lead occasionally to awkward dilemmas, such as that of the student being stayed in his researches, upon arriving at the end of volume the first, until he can discover the whereabouts of volume the second, which some careless or secretive friend has made to occupy an abnormal position either in the right pleura or in the fossa lumbalis of the subject under examination.

On the Mechanism of Respiration. By FRANCIS SIBSON, Esq. From the Philosophical Transactions, Part IV. for 1847.

MR. SIBSON observes that, six or seven years since, while examining the chest in persons subject to dyspnoea, he was struck by observing that the latissimus dorsi, and the serratus magnus muscles, acted during forcible expiration. On further inquiry, he found that neither of them acted during inspiration. He also ascertained that, on *inspiration*, the scaleni acted during the whole time; that the superior ribs came nearer to each other, and the inferior moved farther apart, and that the intercostal muscles between the six superior costal cartilages, as well as the external intercostal muscles between the superior ribs, were in action. The author communicated these observations to Professor Bell, and was advised to examine and figure the muscles of respiration in the lower animals. This he did. He continues—

"After making an extensive series of dissections and illustrations of the respiratory apparatus in the animals that breathe with ribs, I exposed the muscles of respiration in the dog and the ass while alive, and observed what muscles acted on inspiration, and what on expiration. I afterwards inflated the lungs in the dead animal, and found that the same muscles that acted during inspiration were shortened when the lungs were distended. This was important, as it rendered the repetition of vivisections less necessary."

An inquiry of this kind, extended to all classes of animals breathing by ribs, has brought the author to the conclusion that the mechanical part of respiration is far more complicated than it has generally been regarded, and that in some important particulars, the generally received opinions on the subject require to be essentially changed.

The body of the paper is made up of a very large number of anatomical facts deduced in the course of this inquiry. The following extract from the concluding summary presents the results obtained from an examination of the external respiratory apparatus of the mammalia:—

"In the mammalia, the addition of a large and efficient diaphragm—that in the

bird is small—modifies the form and varies the movements of the ribs and actions of the muscles in different parts. The ribs articulate with a dorsal arch. They vary in length: those hinging on the centre of the dorsal arch are the longest, while those on the superior curve gradually shorten from below upwards: those on the inferior curve shorten from above downwards.

"By virtue of this arrangement, the ribs, articulating with the superior curve, when they are raised, approach each other anteriorly. These ribs have each a cartilage, articulating with the sternum, that is, analogous to the sternal rib of birds: they comprise the thoracic set.

"The ribs that hinge on the inferior curve of the dorsal arch, when raised, recede from each other: they have floating cartilages, and are the diaphragmatic set of ribs.

"Intermediate are the longest ribs connected with the dorsal arch: their cartilages are usually linked together, and articulate with the lower end of the sternum: they, when raised, usually recede slightly from each other. All the ribs recede from each other behind. The anterior portions of the ribs move forwards and upwards, and carry with them the costal cartilages and sternum. The posterior portions of the ribs move backwards, push backwards the vertebræ, and deepen the dorsal arch. The scaleni invariably act during the whole time of an inspiration; and in man and the porpoise they expand the portion of lung in the neck, assisted in man by the pleural scalenus. They do not draw the cervical vertebræ to either side, but they draw them, during inspiration, forwards and downwards.

"The external intercostals between the thoracic set of ribs are throughout inspiratory; those portions between their cartilages are expiratory; between the diaphragmatic set of ribs they are inspiratory behind, expiratory to the side and in front; and between their cartilages they are inspiratory; between the intermediate set of ribs they are, for the most part, slightly inspiratory between the ribs, and expiratory in front between the cartilages.

"The internal intercostals of the thoracic ribs are expiratory behind and inspiratory in front, if the ribs approach there, and are inspiratory between their costal cartilages. Between the diaphragmatic and intermediate sets of ribs, and between their cartilages, they are throughout expiratory. The levatores costarum draw the posterior portion of the lower ribs backwards.

"In the ass and dog, the upper fasciculi of the serratus magnus are expiratory, the lower inspiratory, and the intermediate neutral. In man, the greater part of the fasciculi are expiratory.

"In the ass, the lower fibres of the serratus

posticus inferior are inspiratory, and the upper expiratory; in the dog, and, I believe, in man, they are throughout expiratory.

"The following muscles I have observed to be *inspiratory*, in addition to those named above.

"On a moderate inspiration, the levator anguli scapulae; the serratus posticus superior.

"On a deep or difficult inspiration, the superior fibres of the trapezius; the sterno-cleido-mastoid; the sterno-hyoid and the thyroïd, with the genio-hyoid and digastricus; the pectoralis minor; the pectoralis major, its lower fibres.

"The following muscles I have observed to be *expiratory*, in addition to those named above:—

"The latissimus dorsi draws down the scapula in coughing; the trapezius, its lower fibres, the pectoralis major, and the rhomboides, (inferred) combine with the latissimus dorsi and the serratus magnus to draw the scapula forcibly downwards and forwards on the ribs. The recti and the external and internal oblique draw downwards the sternum and ribs; the external oblique draw downwards the sternum and the ribs; the external oblique draw the posterior portion of the ribs forwards; the internal oblique their anterior portions backwards.

"The transversalis and triangularis sternal combine together to form one muscle, the *constrictor of the chest and abdomen*, arising from the sternum, xyphoid cartilage, and linea alba, and inserted into all the ribs but the first; in the porpoise, it rises into the neck, and is inserted into all the ribs, the sacro-lumbalis, and the longissimus dorsi. The expiratory muscles are, combinedly, more powerful than the inspiratory."

We are certain that we shall not be charged with a wish to depreciate the value of researches into questions of mere physiological interest, when we express a strong doubt whether the results deduced by Mr. Sibson from the above investigation, either justified or repaid the means which he adopted to obtain them. "*I exposed the muscles of respiration in the dog and ass while alive*," was an announcement which, we must confess, led us to enter upon the perusal of these pages, with a feeling of regret that an author of great talent and industry, from an anxious desire to obtain recondite knowledge, should have followed the evil example of certain French physiologists. We hold that vivisection, when employed for any purpose which does not immediately tend to enlarge our powers of

coping with disease and suffering in the human race, is a practice so barbarous, and so unworthy of the enlightened members of a humane profession, that we have long determined to lose no opportunity of discountenancing the system.

Proceedings of Societies.

MANCHESTER PATHOLOGICAL SOCIETY.

Aug. 3th, 1847.

Acute hypertrophy of the ascending aorta—death by spasm or palsy of the heart.

Dr. WATTS exhibited a specimen of diseased aorta, projecting on the internal aspect of which, at a finger's breadth from the aortic valves, was a flat button-shaped elevation, about the eighth of an inch thick, with a convex surface, and a circular base half an inch in width. A section of the tumor showed the coats of the vessel in a state of thickening, the middle coat especially appearing in a high degree hypertrophied. Examined with the microscope, the swollen part was seen to be composed of fibres resembling the normal elastic fibre of the vessel: there was no trace of exudation matter, inflammation-globules, fat, tubercle, malignant formation, or earthy matter. Scattered in the neighbourhood of the aortic aperture were several smaller elevations of the same nature, but in an earlier stage of development. The heart was enormously enlarged, yet all the valves were most perfect. The pericardium was rough, with granulations of recent lymph. The lungs were congested with blood, and apoplectic in several places. All other organs were healthy.

The patient, aged 47 years, was first attacked with rheumatic fever eleven years ago, and the disease recurred repeatedly during the next nine years; but for the last two years he had not had an attack, and he apparently experienced no further inconvenience from the malady,—his breathing and general health remaining as ordinary until last Christmas, when heart-disease for the first time attracted his attention. One raw night, being exposed to cold, he was suddenly seized with pain in the cardiac region, and excessive difficulty of breathing. The symptoms progressed, the shortness of breath ever afterwards remained, and anasarca set in. When he came under treatment, March 31st, there was murmur at the base of the heart, and over the cardiac region, which was extensively dull on per-

cussion, and palpitated strongly. The pulse was strong and large, the motion of the extreme arteries much exaggerated, and the efficient state of the valves seemingly justified a comparatively favourable prognosis. The dropsy disappeared, but great anxiety about the præcordia persisted, together with much aching and lightness of the head. Again, in the middle of July, the dyspnoea suddenly became more distressing, and the heart's action weak and irregular, accompanied with copious expectoration of blood, and he gradually sank.

The great size of the heart, with valves so perfect, seemingly proves that the hypertrophy had existed long prior to the sensible manifestation of the cardiac symptoms last Christmas, having probably originated in the rheumatic derangements eleven years ago; and the absence of all suffering for so long a period shows that the enlargement must have proceeded so gradually as to have allowed the system to accommodate itself insensibly to the excess of the heart's action. The hypertrophy thus proceeded until Christmas, then rheumatism fixed on the muscular system of the heart, and so deranged the balance of the circulation as to occasion dropsy. The heart once more rallied, till some new indiscretion set up actual pericarditis, which weakened the action of the organ to such a degree as to produce irremediable obstruction to circulation, and pulmonary apoplexy.

Whether the aortic disease should be considered as merely a particular form of hypertrophy of the elastic fibre of the vessel, or as one of the modes of development of atheromatous, cartilaginous, or petrous deposit, Dr. Watts was not prepared to give a positive opinion; but if it were a morbid state about to pass into atheroma, cartilage, or stone, then for the development of such matters an hypertrophied fibre must be supposed ultimately to lose its proper character, and actually undergo the particular degeneration,—a view very different from that generally entertained of formation of these morbid products.

There is nothing in the history of the case to prove that the aortic disease had any direct connection with the suffering in the cardiac region; but, in another instance, in which Dr. Watts had met with disease of the vascular substance like this, the patient experienced most agonising pain in the præcordia, and ultimately fell down dead in a moment of agony, notwithstanding the heart and its valves were perfect. The following are the particulars of the case:—

Acute hypertrophy of the ascending aorta—death by spasm, or palsy, of the heart.

James M'Connell, aged 35 years, a fresh-coloured finely-grown man, to all appearance

constitutionally sound, who had suffered from a smart attack of rheumatic fever two years previously, came under treatment the 13th December, 1845, complaining of distressing palpitation of the heart of twelve months' duration, pain in the præcordia, and shortness of breath, with increased suffering on exertion; besides alarming seizures of orthopnoea at uncertain intervals, attended with most excruciating pain in front of the chest; so intolerable, indeed, that he would writhe in the agony, and press his breast forcibly upon the floor. The pulse was small, weak, and irregular, and there was no extraordinary impulse of the heart, or of the vessels in the neck; the percussion sound was quite correct, and both sounds of the heart distinct, as also devoid of morbid accompaniment in the cardiac region. A loud single-bellows murmur was audible, apparently close to the ear, at a spot near the extremity of the sternum, immediately above the ensiform cartilage. This murmur was unusually circumscribed, and could be heard with diminished intensity only to a short distance; indeed, it was confined within such narrow limits, as to have been passed over unperceived for some time. As the palpitation and præcordial suffering appeared to submit in no degree to treatment, a more complete examination was made: the patient stripped, the entire chest was carefully auscultated, and the murmur detected at the point which he referred to as the centre of pain. The detection of the murmur in such peculiar circumstances gave quite another character to the case; the prognosis was from that time forth most unfavourable, and a suspicion of the possible presence of aneurism was excited, notwithstanding the absence of any particular impulse at the part, or other confirmatory sign. Where all signs of heart disease failed, such a murmur sufficed to awaken this suspicion; but the singularity of the murmur as to position, and other circumstances, led to the formation of the guardedly-qualified diagnosis, that either some very unusual condition of the parts, or else aneurism, existed. The patient continued for a time to complain as described, the symptoms becoming even more and more severe, till one morning, 10th February, 1846, after having fully rallied from an agonising paroxysm of pain and orthopnoea, he suddenly fell back in bed a corpse: it is remarkable that he preserved up to the last a fresh colour, and the aspect of a man of sound constitution.

After death, the only discoverable cause for such suffering, and the sudden decease, was a particular lesion of the aorta at its origin, implicating, also, the orifices of the coronary arteries. The heart in all its parts, proportions, and valves, was a perfect speci-

men of the healthy organ, but the aorta, from the aortic aperture onward for the space of two inches, was thickened in its whole circumference by a continuous irregular swelling of the vascular substance. The vessel at the swollen part was the eighth of an inch, and upwards, in thickness; on section, the diseased parietes resembled much in appearance the colon as thickened by dysentery, and the internal surface of the vessel, though preserving its polish, was uneven, from the irregular thickness of the swelled vascular substance. The mouths of the coronary arteries were pervious, but they were also implicated in the swollen substance of the aorta, and in such a way the pre-entrances of blood into them, under particular circumstances, might have been impeded: the lesion bore all the marks of an acute disease, or active hypertrophy.

Dr. Watts observed—"The case shows that a certain disease of the aorta, putting on the garb of aneurism without being aneurismal, may directly produce the most extraordinary derangement of the action of a healthy heart, occasion excruciating and alarming suffering, where the heart is perfect in itself, and prove fatal by stopping the heart's movements, without rupture or loss of blood.

"The aortic disease might be supposed to have destroyed life, either by mechanically preventing the flow of blood into the coronary arteries of the feebly-acting heart, thus quenching its vitality in the most direct manner, or else by occasioning spasm or palsy of the heart from its vital sympathy with the suffering aorta."

Correspondence.

SPONTANEOUS RUPTURE OF THE UTERUS FROM THINNESS OF THE PARIETES.

SIR,—Your number for Sept. 17, contains a Case of Spontaneous Rupture of the Uterus, from an American journal, to which the following is in some respects a parallel. It was mentioned to me, some years since, by a medical friend on whose statement I can place the fullest reliance, as having occurred in his private practice. Mrs. — was taken in labour I believe at her full time. The labour appeared to be going on naturally, when suddenly symptoms of great depression occurred, accompanied with vomiting and extreme tenderness of the abdomen, and the patient sunk rapidly, dying a few hours after the first accession of the dangerous symptoms. On examination after death, there did not appear to be any malformation of the pelvis, or disproportion-

tionate size of the child. She had borne several children, and her labours had been natural, though rather lingering. The cause of the rupture appeared to be, that one-half of the uterus, as the foetus increased in size, merely dilated, but did not increase in thickness as it should have done, so that whilst the cavity of the uterus was of the size it ought to have been in pregnancy, the substance of the walls of one-half was little thicker than brown paper, the substance of the other half being of the proper thickness. It appeared, therefore, when labour came on, that the part of the uterus which was thus preternaturally alienated had been unable to resist the tension, and had given way. Nothing was discovered to account for this want of nutrition. The patient had generally enjoyed tolerable health. The true nature of the case, though suspected, was not ascertained till after death. So far there is much resemblance between this and the American case, and they seem to establish the interesting pathological fact, that one side of the uterus may either congenitally, as probably was the case in the American instance, or from some morbid and subsequent, though unascertained cause, as in the instance I have mentioned, be wanting in that natural and increased degree of nutrition proper to pregnancy, whilst the proper change goes on in the other half, just as one limb may either congenitally or subsequently be stationary in growth, whilst its fellow properly increases. But what explanation can be given of the want of communication between the vagina and the cavity of the uterus in the American case? There is nothing in the statement of it which could lead to the belief that the obliteration of the os uteri occurred subsequently to impregnation, but every reason to make us conclude that the appearances described were normal. By what means, then, did that actual contact take place between the semen and ova which is considered essential to impregnation? Surely if this case be correctly reported we have to unlearn some of our physiology, not to say of our medical jurisprudence also.

I am, sir,

Your obedient servant,
JOHN BARRETT, F.R.C.S.E.

3, Pierrepont Street, Bath,
Sept. 20, 1847.

. We think that in the American case, the fact of pregnancy must be taken as affording sufficient proof that there was a communication between the cavity of the uterus and vagina. It may have been abnormally situated, and therefore overlooked.

Medical Intelligence.

FEVER IN EDINBURGH.

THE fever which has raged so fearfully in Edinburgh during the past summer does not appear to be assuming a more modified or less virulent aspect. On the contrary, by all accounts, the contagion appears to be increasing daily, and its victims are becoming so numerous as to give great cause for alarm, and to demand the adoption of such prompt and effectual steps as skill and experience can recommend, to mitigate, as far as possible, its dreadful effects. Of late, the epidemic has appeared in several instances in the middle and upper classes of the city, though its devastations are confined chiefly to the poor and destitute. On Monday, Mr. Mackay, one of the assistant-inspectors of the poor for the city parish, fell a victim to the malady, which he caught only ten days previously in the discharge of his official duties. Mr. Mackay has been connected with the institution for ten years, and was an excellent, active, and painstaking officer. This is the second assistant-inspector which the parochial board have lost within the last few months; Mr. Jack having died in similar circumstances in May last. We learn also that the mistress of the industrial school recently set on foot by the board fell a victim to fever some weeks ago; and that the master, Mr. Thomson, is at present lying ill of it. In fact, the operations of this valuable institution are to be completely suspended for the present, and the building, which was used for the purposes of the school, is to be devoted to the reception of fever patients. To give some idea of the mortality from the disease at present, we may state that the number of paupers which the city parochial board alone have sent to the infirmary since the 1st of June to Monday last, was 887, of whom no less than 485 died, 70 per cent. of these being fever cases. That the disease is fearfully increasing is evident from the fact that 455 of the above 887 have been admitted since the 10th of August; and, above all, from the circumstance that at the present moment there are no fewer than 143 fever patients in various parts of the town, who, from want of accommodation, cannot be admitted into the infirmary. Nine-tenths of these are Irish, who have flocked to the charity workhouse from all parts of Scotland. The Royal Infirmary has long been inadequate to the demands made for admission within its walls, and though an additional large shed, capable of containing, we believe, from 80 to 100 beds, is in the course of erection, that accommodation is even far short of what the present calamity so grievously necessitates. We

understand that the medical committee of the parochial board intend to have an interview with the managers of the infirmary, with the immediate view of taking some decided steps to provide for those cases of fever which cannot at present be overtaken, and we have no doubt they will meet with the liberal support of the community. Fever has also attacked several of the police force, 12 of the constables being at present under its influence, and some of them are in a very wretched state.—*Scotsman*.

THE PROGRESS OF THE ASIATIC CHOLERA.

A LETTER, dated St. Petersburg, 11th ult. states that the number of persons who died of cholera between the 16th October, 1846, and the 14th June, 1847, in the Caucasus, amounted to 6,318. The cholera reached its greatest intensity in Astracan on the 25th July. On the 31st of that month 131 persons died. It has now almost entirely disappeared. The Russians in the Caucasus suffered more than the Mussulmans, because the latter are more sober in their habits and better clad.

The Peninsular and Oriental steamer Sultan had brought intelligence from Trebizonde of the 4th. The cholera still raged in Georgia, and so great was the apprehension felt in Trebizonde, that all communications had been interrupted between that city and Batoum, where it was believed to have manifested itself. At Erzeroum the number of victims was inconsiderable; not more than 20 or 25 cases occurred daily, one-third of which were fatal. The poorer classes were principally affected. The disease had appeared at Redout Kale, but was of a mild character. After quitting Persia, it had re-entered that country by the Carabagh. Letters from Tabreez, of the 22d of August, mentioned that, in that town and at Khoi it had recommenced with some violence.

Private letters from Constantinople, of the 17th ult., state that the cholera positively broke out at Trebizonde on the 8th.

Dr. Prus informed the Academy of Sciences of Paris, on Monday, the 27th ult., that the Asiatic cholera had manifested itself at Riga. In 1832, Riga was the first city in the north visited by the scourge. Dr. Prus, however, remarked that the epidemic is not so fatal as it was when it first appeared in 1832.

This report of the outbreak of the cholera at Riga has not been confirmed. It is stated that the French Government not only considered the arrival of the cholera in France as probable, but had already, with praiseworthy foresight, ordered measures to mitigate its severity, if not to arrest its progress. These had been ordered with commendable secrecy, but also with a promptitude and an energy highly creditable to the Government.

The *Augsburg Gazette* of the 29th ult.,

states that according to an official communication the cholera is moving more and more towards the centre of the Russian empire. On one side it has followed the passage of the Wolga and arrived at Saratow. On the other it has appeared in the province of the Don. A Russian vessel brought it to Kertch.

SALARIES OF MEDICAL OFFICERS OF POOR LAW UNIONS.

At a meeting of the Poor Law medical officers of the Basford Union, held at the Flying Horse Hotel, Nottingham, October 2nd, the following resolutions were passed unanimously:—Mr. Orton, of Beccston, in the chair; Mr. Norman, of Ilkeston, vice-chairman.

1st.—Proposed by Mr. Longstaff, of Ilkeston, and seconded by Mr. Fowler, of Calverton—"That this meeting, representing the feelings of the medical officers of the Basford Poor Law Union, deprecates the present inadequate salaries of the medical officers, sanctioned by the Poor Law Commissioners." 2d.—Proposed by Mr. Ebsworth, Bulwell, and seconded by Mr. Graham, Basford—"That this meeting is of opinion that a commission (a moiety consisting of medical men, acquainted with Poor Law Union practice,) should be issued by Government, to enquire into the subject of the duties and remuneration of medical officers." 3d.—Proposed by Mr. Norman, seconded by Mr. Longstaff—"That, on careful investigation, it appears to us, that in the Basford Union the medical salaries are far inferior to those in most other unions, being scarcely equal in a single instance, to the actual cost of drugs and horse expenses, and therefore preclude the possibility of the medical officers doing justice to themselves and the poor also." 4th.—Proposed by Mr. Fowler, seconded by Mr. Ebsworth—"That copies of the returns furnished to this meeting by the several medical officers, be forwarded to the Poor Law Commissioners and the Board of Guardians, with the view of inducing them, at the earliest possible period, to remove the grievances under which the medical officers of the Basford Union are now suffering." 5th.—Proposed by Mr. Longstaff, seconded by Mr. Graham—"That this meeting is of opinion that the present fees allowed for vaccination in the Basford Union are so low as to render the Vaccination Extension Act almost a nullity—and that no fee less than one shilling and sixpence will cause the Act to be carried out in the spirit in which the Legislature intended." 6th.—Proposed by Mr. Longstaff, seconded by Mr. Ebsworth—"That this meeting condemns the exclusion of burns, scalds, and other long-protracted and dangerous surgical cases, from article 177 of the present Poor

Law Regulations; and they are of opinion that the article 181 should have been more defined and made imperative." 7th.—Proposed by Mr. Graham, and seconded by Mr. Norman—"That these resolutions be printed, and a copy forwarded to the Poor Law Commissioners—the Basford Board of Guardians—the medical periodicals, and the local journals."

APOTHECARIES' HALL.

NAMES of gentlemen who passed their examination in the Science and Practice of Medicine, and received certificates to practise on Thursday, 30th September, 1847.—Horatio Coare Brenchley, Maidstone, Kent.—Thomas Hood, London.—Joseph Rushforth.—Henry Fowler Jenkinson, Doncaster, Yorkshire.—Samuel Powell,⁹ Norwich.—George Bellasis Masfen, Stafford.

OBITUARY.

DEATH OF DR. CURRAN.

AMONG the many instances of death which in the present state of our unhappy and afflicted country we are daily called on to record, we have not yet met one so untimely or so harrowing in its circumstances as that which it is now our painful duty to announce. Dr. John Oliver Curran, whose illness we mentioned with extreme regret some days ago, sank rapidly during the latter part of Saturday, and through the night of that day; and notwithstanding all that the skill and brotherly aid of the ablest men in the profession could affect, the fatal typhus claimed him for its victim, and he expired at nine o'clock yesterday morning—another bright name added to the list of martyrs of the medical profession in Ireland.

Who this young man was we need not tell our readers. His private character—amiable, generous and humane—the best of sons, the most affectionate of brothers, the staunchest of friends—we have not the heart to decant upon. Our grief is yet too fresh and gushing to permit us to detail in words the many virtues, the unselfish kindness of heart, the noble disregard of danger, and the thousand graces of social life which endeared him to his friends and to all that came within the benign and gentle influence which he invariably shed around him.

His transcendent talents, his great professional acquirements, the rapid strides he was making in his noble career, the bright promise for the future, and the achievements of the past, are well known to his brethren—the best judges of his pursuits and labours. All these will no doubt be embalmed in their fit and proper place by those capable of appreciating their merits; but to the memory of Dr. Curran we have, in common with all the well-wishers of our native land, that tribute to pay which does not require us

to be either private friends or professional brethren.

Let it be remembered by the Irish medical profession that he was the man who first raised his voice against the insult and indignity offered to that body, by refusing to accept the miserable stipend proposed as remuneration for risking their lives in defending the Irish peasant and artisan from the ravages of the pestilence which now stalks amongst us. And yet, while he thus spurned the degrading offer, for the benefit of his brethren, he daily toiled without fee or reward, in the haunts of misery and distress, to relieve suffering, to succour the fever-stricken poor; and in his generous endeavour to rescue others he himself fell a sacrifice to the Moloch of pestilence and misrule.

Let it never be forgotten by the Irish people that to the courageous disregard of official threat—to the honest and indignant appeal made in their behalf to the sympathies and benevolence of Europe by Dr. Curran—were the gates of fever sheds, the barred portals of hospitals, and the stern hearts of rulers, opened to afford them shelter and a cup of water when they blackened, exposed to the sun and sky, in the lanes and ditches around our metropolis.

Regardless of danger he grappled with the plague—patriotic and truly generous, he devoted his time, his genius and his knowledge to his country, to science, and his friends. In John Oliver Curran his mourning family have lost the most feeling and affectionate of relatives; an aged father his only son; his friends, a soul of sterling and enduring worth, unalloyed by selfishness, unpurchaseable from its allegiance; the Irish School of Medicine, the University and the Royal Academy, one of their most promising sons. Science may mourn the most devoted of her votaries, Ireland a man whom she could ill spare, now least of all, and humanity a friend. For our rising literature his able pen was wielded. For our dawning nationality his manly voice was raised. To elevate us in the scale of nations he not only toiled, but by his conduct and deportment (the real tests of patriotism) mainly contributed. No foreigner of distinction ever visited the Irish metropolis within the last few years without feeling indebted to Dr. Curran.

Gentle and unobtrusive in his manner, a tone of serious thought and an extraordinary fund of information, with a remarkable facility and clearness of expression, graced his conversation, and rendered him one of the most delightful and instructive of companions. If being utterly devoid of envy towards others, and a holy, never-failing desire to do good, could ensure a man the world's friendship, then had Dr. Curran no enemies.

His writings are eminently remarkable for their unbounded research, their power of argument and perspicuity of style; no man understood better the force and value of the English language. Dr. Curran had but entered his twenty-seventh year. He was professor of the practice of medicine to the Apothecaries' Hall, a licentiate of the College of Physicians, a graduate of Trinity College, a member of the Royal Irish Academy, and attached to all the literary and scientific institutions of this city.—*Saunders' Dublin News Letter.*

THE LATE ROBERT STORRS, ESQ.

AMONG the numerous medical practitioners who have fallen victims to the virulence of the present fever, it is our painful duty to record the death of Mr. Storrs, of Sheffield: he sank after an illness of about three weeks' duration. Mr. Storrs, being the medical attendant of the Doncaster Union Workhouse, had been exposed during some months to the destructive influence of the epidemic "famine fever." A less humane, a less conscientious man, might have escaped unscathed; but Mr. Storrs' assiduity and humanity would not allow him to neglect the meanest and poorest of his fellow men. He has died on the field of duty, and goes to the grave with a character esteemed and respected by thousands. Mr. Storrs was in his 47th year. He practised in Sheffield upwards of 24 years, with credit and success. He has left a widow and *twelve* children to mourn the appalling loss of a devoted husband and most affectionate and anxious father.

JOHN MORGAN, ESQ.

On the 4th instant at his residence, Tottenham, John Morgan, Esq., Member of the Council of the Royal College of Surgeons, and, for more than twenty years, Surgeon and Lecturer on Surgery at Guy's Hospital.

Selections from Journals.

THERAPEUTICS.

INHALATION OF THE VAPOUR OF SULPHURIC ETHER IN CASES OF INSANITY.

WE have administered the vapour of ether to sixteen different patients at the New York State Lunatic Asylum—viz. to fourteen men and to two women.

Some have taken it but once, several have taken it three or four times, and a few eight or nine times.

The cases in which we have used it have been various. Some were cases of melancholy and of religious despair, others were affected by various insane delusions and

hallucinations, and some belonged to the demented class; to none highly excited or maniacal, have we as yet given it.

Some were not affected at all by it; one man and one woman inhaled it for more than ten minutes without experiencing the slightest change of feelings. Several seemed intoxicated, and said they felt as if drunk. One who had slept but little for several nights, and who usually slept poorly, rested remarkably well the night after taking it, and said he must have taken a large dose of opium.

Some have appeared better since they commenced taking it—been more active, cheerful, and sociable. One who has taken it nine times seems considerably improved; he was previously dull, inactive, and unsocial, and his pulse but 48 in a minute; since the use of the ether his pulse has increased to 66 in a minute. He is now cheerful and sociable, and is able to work; he says he is better, and thinks the ether has benefited him.

A few were highly excited by it. One man who was in a state of religious despair, after taking it awoke as from a terrific dream, and, in a most violent rage, seized the person who administered the ether. He afterwards said that he at first dreamed he was in hell, and that taking the ether had sent him there; and hence his rage and violence against the operator.

When this excitement abated, he seemed ecstatic with delight on account of the visions he had seen and the revelations that had been made to him. "I floated away," he exclaimed, "in infinity of space, I have seen a future world; what I have seen has proved the dogmas of religion, unless a man comes up to an iota, it is over with him." He said he "felt convinced of the truth of Newton's theory of the solar system, as he saw the planets revolving in the order and way pointed out." When fully recovered from the effects of the ether, he recollected the assault, and begged forgiveness.

Some were pleasantly excited after using it; one danced, another, when asked how he felt, after awaking from a short sleep, replied "exactly, exactly neat, by jingo—I never felt better in my life than I do now. I thought I was in heaven, then in hell, then at the judgment, and then at school; I must have slept two hours." Another, when asked by a patient to tell him what his feelings were, said, "he felt like a kind of airy nothingness—as if he could fly." To none has it proved the least injurious, and we are rather favourably impressed with its use, though we do not expect any striking remedial effects from it; we shall, however, continue our inquiries, and shall endeavour to ascertain if there is not some class of the insane to whom it may be especially useful.—*American Journal of Insanity.*

PHYSIOLOGY.

THE RIGHTS OF ELECTORS DEPENDENT ON
A NORMAL CONDITION OF THE SEXUAL
ORGANS !

[In connection with a case of doubtful sex reported at p. 562, it may be interesting to quote the following related by WM. JAMES BARRY, M.D. in the *New York Journ. of Med.* (Jan. 1847).]

In March, 1843, I was requested to examine the case of Levi Suydam, aged 23 years, a native of Salisbury, Con. At the exciting and warmly contested election of the spring of this year, almost everything bearing the semblance of the human form, of the male sex, was brought to the ballot-box. It was at this time, and under these circumstances, that the above-mentioned person was presented by the whigs of Salisbury, to the board of Selectmen, to be made a freeman; he was challenged by the opposite party on the ground that he was more a female than a male, and that, in his physical organization, he partook of both sexes.

The following was the result of the first examination. On exposing his person, I found the mons veneris covered in the usual way; an imperforate penis, subject to erections, and about two inches and a half in length, with corresponding dimensions; the dorsum of the penis was connected by the cuticle and cellular membrane to the pubis, leaving about an inch and a half free, or not bound up, and towards the pubic region. This penis has a well-formed glans, with a depression in the usual place of the meatus urinarius, a well-defined prepuce, with foramen, &c. The scrotum is not fully developed, inasmuch as it is but half the usual size, and not pendulous. In the scrotum, and on the right side of the penis, there is one testicle of the size of a common filbert, with spermatic cord attached. In the perineum, at the root of the corpora cavernosa, an opening through which micturition is performed, this opening large enough to admit the introduction of an ordinary sized catheter. Having found a penis and one testicle, though imperfectly developed, and without further examination, I gave it as my opinion, that the person in question was a male citizen, and consequently entitled to all the privileges of a freeman !

On the morning of the 1st Monday in April (election day) I was informed that Dr. Ticknor would oppose Suydam's admission. Suydam came forward; Dr. Ticknor objected. I then stated to the meeting, that from an examination I had made, I pronounced the person in question to be a male, and requested that Dr. Ticknor might, with the consent of Suydam, retire into an adjoining room, and examine for himself. This

was done, when Dr. Ticknor stated to the meeting that he was convinced that Suydam was a male. Suydam accordingly was admitted a freeman—voted—and the whig ticket carried by one majority !

A few days after the election, it was told me that Suydam had regular catamenia. I then commenced further investigations, and learned from Mrs. Ayres, the sister of Suydam, that she had washed for him for years, and that he menstruated as regularly, but not so profusely, as most women. I next saw Suydam, who very unwillingly confessed that such was the fact. I then requested him to meet Dr. Ticknor and myself the next day at my office; when the following additional particulars were elicited. Said Suydam is five feet two inches in height, light-coloured hair, fair complexion, with a beardless chin, and decidedly of a sanguineous temperament, narrow shoulders, and broad hips; in short, every way of a feminine figure. Well-developed mammae, with nipples and areolæ. On passing a female catheter into the opening through which micturition was performed, and through which, he again stated, he had a monthly, periodical, bloody discharge, instead of traversing a canal and drawing off urine, the catheter appeared to enter immediately a passage similar to the vagina, three or four inches in depth, and in which there was a considerable play of the instrument. He stated that he had amorous desires, and that, at such times, his inclination was for the male sex; his feminine propensities, such as a fondness for gay colours, for pieces of calico, comparing and placing them together, and an aversion for bodily labour, and an inability to perform the same, were remarked by many.

I further learned from an old lady who was present at the birth of Suydam, that on the second day after his birth, Dr. Delamater, who attended as accoucheur, made with an instrument, the opening through which he has ever since performed micturition.—*American Journal of the Medical Sciences*, July, 1847.

MEDICINE.

SUPPOSED DIVISION OF THE SPINAL
MARROW—RECOVERY.

A VERY remarkable example of this is recorded by Dr. Eli Hurd, of Middleport, Niagara County, New York, in a late number of the *New York Journal of Medicine*.

The subject of this case was a man who jumped from a waggon upon a piece of timber, the surface of which being wet, he slipped, and fell upon his back and left side. On endeavouring to rise, he found his lower extremities numb and powerless. He

called for assistance, and when raised, a chisel, which was in his coat pocket when he jumped, was found sticking in his back. An attempt was made to extract the instrument, which resulted in pulling off the handle. Dr. Hurd was then called, and in a few minutes was on the spot: with the assistance of three or four men, and after a long and severe effort, Dr. H. succeeded in drawing out the chisel, which was *five inches in length to the shoulder*, tapering to less than one-eighth of an inch in thickness at the cutting extremity. The wound was then dressed, and the patient carefully conveyed home. At the time of extracting the instrument, the patient saw "vivid flashes of light, which were apparently followed by total darkness." During the operation he was conscious of very little pain.

The wound made by the chisel was opposite the spinous process of the lower dorsal vertebra, on the left side. At its superior extremity it was half an inch from the spinous process and one inch at its inferior extremity, so that a line drawn parallel to the spinous processes of the vertebrae, and three-fourths of an inch to the left, would have intersected it in the middle. The direction of the instrument was upwards, at an angle from the surface of twenty to twenty-five degrees, and to the right of about twelve degrees, penetrating the spinal column, and undoubtedly entirely dividing the cord. Perfect insensibility of the skin below the wound, with paralysis of the lower extremities, bladder, and rectum, was the immediate consequence. The shock that the system received produced great prostration for some forty hours, when reaction took place, and was followed by fever for ten or twelve days. The external wound cicatrized in a few days, scarcely discharging a spoonful of pus. The urine was drawn off by means of the catheter for six days after the accident, when the bladder began to resume its functions, and, two days after, the instrument was discontinued. Cathartics failing to move the bowels during the same period of time, and for two or three days longer, dejections were procured by stimulating enemata. Returning sensibility occurred in the skin on the fifth day, and an imperfect use of the limbs about the fifteenth. The patient first commenced locomotion on his hands and knees, then by pushing a chair round, and afterwards by means of crutches, which he has been obliged to use ever since. Distortion of the feet and ankles commenced some weeks after his efforts to get about on crutches, and increased for several years thereafter; yet his general health continued good.

The treatment during the stage of prostration was by diffusible stimulants; through the febrile stage, by antiphlogistics; while

friction with stimulating liniments to the paralysed parts was used throughout both stages and for months afterwards. Sensibility of the skin and action in the inferior extremities returned very slowly; so much so, that four years and seven months after the accident above mentioned, carelessly sitting or kneeling with his left knee nearer than usual to the hot fire, without feeling any pain, or being conscious of suffering, the skin and integuments over the knee-pan and on either side of it were so badly burned that mortification and sloughing took place. This was so deep, that the cavity of the joint was opened and exposed to view. The patella was covered only by the periosteum, and after a few days, as he was endeavouring to draw his leg up in bed, broke transversely across. The superior portion of the patella protruded so much from the wound, in consequence of the retraction of the extensor muscles, that, after various unsuccessful attempts to reduce and keep it in place, it was removed by excision. The knee was now much inflamed and swollen. Fungous vegetation sprang up from every side of the wound, filled up the cavity, and formed a spongy protuberant mass above and around it. Hemorrhage followed every application of caustic that was made to check this exuberant growth, as well as compression—even the slightest touch. The miserable patient became extremely exhausted, and amputation of the diseased and crippled limb seemed the only alternative, and even that a doubtful one.

At this juncture, three weeks from the burn, the wound was dressed with Singleton's Golden-Ointment, under which a cure was gradually effected. A large ugly-looking puckered cicatrix remains over and above the left portion of the joint. The inferior portion of the patella is drawn down upon the outside of the knee-joint. The leg is rotated outwards, and the heel thrown in so as to point to the hollow of the right foot. The toes are thrown out and drawn up towards the metatarsal bones, and the whole foot is drawn inwards, and flexed upon the tibia in such a manner as to make almost a right angle with the leg. There is also considerable deformity of the right foot and ankle, though less than of the left. There is no curvature of the spine, nor has been at any time. Nor is there any complaint whatever of the back. He can get into and out of a carriage, mount a horse from the ground, without assistance, and ride off at any pace. He has been elected constable and collector of the town in which he resides for a number of successive years, discharged the duties of his office acceptably to the public, and attends to many other kinds of business. He has married within two years, and has one child.

In fact, he is, in every sense of the word, as well as he ever was, except his crippled condition.—*American Journal of Medical Sciences.*

[REMARKS.—The fact that, in ordinary cases of division of the spinal marrow consequent upon fracture and displacement of the vertebrae, &c. complete reunion by organized material of the injured surfaces of the cord, and consequent recovery from the paraplegic symptoms, has never been known to take place, is of course no proof that such a result cannot, under any circumstances, be effected. The degree of contusion, laceration, and actual loss of substance, which the cord sustains in most of these cases, together with the narrowed condition of the spinal canal from the displacement of its bony parietes, which is almost always present, must necessarily render it almost a matter of impossibility that the continuity of the nervous tract should be restored, for however long a time life may be protracted, after the injury. But it is not certainly proved that reunion of the surfaces may not be effected, where the cord has been simply divided low down by a clean incision. Still, on the other hand, proof is wanting of the possibility of such reparation taking place, and we do not at all consider that Dr. Hurd's case can, for an instant, be received as affording such proof, for the following reasons:—the opinion that the instrument divided the cord was merely conjectural, and the renewal of power over the bladder on the sixth, and the partial return of sensibility and power in the lower limb on the fifth and fifteenth days after the accident, render it almost certain that the division of the whole or of the greater part of the cord could not have occurred, as it appears to be in the last degree improbable that reunion of the divided surfaces should have been sufficiently complete by the fifth and sixth day to have enabled parts below the seat of injury to resume their functions. We are inclined to believe that the cord escaped direct injury from the penetrating instrument, and that the paralysis depended upon the effusion of blood around or within its sheath. A partial absorption of the more fluid parts of such effusion will account for the speedy return of imperfect sensation and motor power to the lower extremities, while the slow removal of its remaining solid portion affords an explanation of the very gradual and partial disappearance of the paraplegia. At all events we do not believe there is any reason to conclude that the cord suffered from more than a severe contusion, or, at most, from a superficial graze or slight division of its structures.—*Ed. Gaz.*]

SPECIAL PATHOLOGY.

ON ENTOZOAL, OR WORM-ANEURISM, IN THE LOWER MAMMALIA. BY JAMES MERCER, M.D. F.R.C.S. ETC., EDINBURGH.

DR. MERCER, after enumerating the ordinary forms of aneurismal disease, observes:—Such are the usual conditions that exist in the human individual; but in the horse, independent of the simple, true, or false aneurism existing, there also occurs in the tumors, the presence, in the majority of cases, of *hematoid entozoa* or worms, which modify the nature, course, and termination of these pathological changes in a very important degree. It is to the latter form of disease that the present remarks refer, and to which the term "worm-aneurism" has been applied by Rayer, an accurate account of which will be found in his paper, *Recherches Critiques, et Nouvelles Observations sur l'Aneurisme Vermineux*, in the *Archives de Méd. Comparée*, No. 1, 1842. An interesting example of this worm-aneurism came under my notice a short time ago, attended with fatal consequences.

The animal in which this disease occurred was a very handsome bay hunter, seven years of age. We shall not quote the symptoms which preceded the animal's death, but pass on to the appearances discovered post-mortem.

Death was found to have resulted from the bursting into the abdominal cavity of an aneurismal tumor of the posterior aorta, situated around the origin of the coeliac axis. The interior of this cavity was almost completely filled with coagulated blood; and on searching carefully for the aperture in the aorta whence the discharge had come, two entozoa were found entangled in the coagulum, between two folds of the jejunum at the root of the mesentery. The aorta was then cut through at the aortic aperture into the diaphragm, and the trunk carefully separated as far as its bifurcation into its iliac branches; the whole was removed for further dissection. The following were its pathological conditions:—The tumor was of a large size, occupying the entire lower half of the periphery of the aorta. It was situated around the roots of the coeliac axis, extending anteriorly between the crura of the diaphragm, and posteriorly involving the origin of the anterior mesenteric artery; and along its right side, between the roots of the hepatic and anterior mesenteric arteries, an oblique, lacerated fissure was found, penetrating through the parietes of the tumor, but having its space almost entirely filled up by the protrusion of two entozoa. The interior of the tumor contained an irregular clot of fibrine arranged in layers; and, on separation of these, seven entozoa were found between them. These worms were

not imbedded in any cysts with distinct walls, but were simply lying in small irregular cavities between the layers, and between which cysts and the general cavity of the tumor there existed a communication in only one instance. In the margin of the fibrinous clot, close to the aperture through the coats of the artery, another space of a larger size was observed. This space was still partly occupied by the bodies of those entozoa that were engaged in the aperture, and it was evident that this space between the layers of the fibrine had also been formerly entirely occupied by them. These entozoa were engaged in the aperture irregularly; in one the head was entirely protruded, and the other had its body doubled up. The coats of the artery that entered into the formation of the tumor were not increased in thickness, and, towards the aperture, they became gradually thinned. Here and there the inner surface of the tumor was studded with small tubercular elevations, in the centre of the larger of which the rudimentary and embryonic forms of the entozoa were found; and, on the margin of a fissure, one of a considerable size was found embedded on the inner surface of the middle coat of the artery, and which, from the change induced on the elasticity of the artery by its presence, had evidently been the immediate cause of the sudden rupture of all its coats. The entozoa that were found in the abdominal cavity, as also those engaged in the fissure, and between the layers of the fibrinous deposits, were the *strongylus armatus minor*, Rodolphi. Those that were found in the clot of blood, at the root of the mesentery, were the largest in size, and nearly correspond to the size of the *strongylus armatus major*. Those in the fibrinous deposits within the tumor were about eight lines in length, and those engaged in the aperture somewhat larger. In his description of the *strongylus armatus major*, Rodolphi says, '*strongylus intestinalis adultus* duos circiter pollicis longus, fuscus, vasculis genitalibus albis translucentibus, hinc variegatus; rectus ut fere strictus.' And of the *strongylus minor*, 'aliquot lineas ad pollicem usque longi, candidissimi, capite tamen (a sanguine hausto) ruberrimo, ab intestinalibus specie non differunt, sed cum his nondum adultis at decoloribus exasse conveniunt.' Those observed in this case, though of a larger size than those described by Rodolphi, nevertheless in all other respects are perfectly analogous. In the paper by Rayer, already referred to, that author observes, that 'according to his investigations, the worm-aneurism almost always develops itself in solidungulous animals, in the arteria mesenterica anterior, and generally in adult and old individuals.' He

found the cavities of the aneurismal dilatations sometimes narrowed or quite filled up by a growth of fibrous layers: in the smaller depositions of these layers only few strongyli were present, but in those of larger size they are found in greater numbers; they were often also met with in the ossified walls of the aneurism. Rayer has never seen the internal arterial coat of such worm-aneurisms perforated or ulcerated: the worms remain between the fibrous (fibrinous?) depositions, but never between the coats of the artery. Worm-aneurisms, it is believed, never burst, as they are always accompanied by hypertrophy of the arterial walls. Rayer, however, in opposition to this opinion, asserts that the strongyli pierce the walls of the arteries, and so get into the cavities. The most of the strongyli are found in the fibrous (fibrinous?) depositions, and project sometimes with the head and sometimes with the tail; only a few lie free in the aneurismal cavities. Gruby relates a case of aneurism of the cæliac axis in the horse, in the cavity of which fibrous deposits and entozoa, resembling *ascarides*, were found. They were, however, nothing else than individuals of the *strongylus armatus minor*. In some points the case above related differs from those that have been observed by Rayer. In the first place he has never seen the worms between the coats of the artery. In one case, the embryonic forms were found embedded in the middle coat of the vessel, and covered by its internal tunic; the greater proportion, however, of the worms were found between the fibrinous layers, though they seem to have been discharged into the cavity of the tumor from the cysts in the tunics in which they had been developed. In the second place, the parietes of the tumor were not generally hypertrophied; on the contrary, they were extremely thin towards those points whence arose the large arterial branches, and at the point of rupture the entire middle coat had been removed.—*The Veterinarian*.

PATHOLOGY.

ULCERATION OF THE APPENDIX VERMIFORMIS IN A CHILD, DEPENDING UPON THE PRESENCE OF AN EARTHY CONCRETION. BY DR. A. F. HOLMES.

THE subject of the case was a large, healthy, and precocious child, of the age of twenty months. He became indisposed on the night of Thursday, (10th March) being restless and feverish, but not complaining of pain. The next day he was languid and dull, indisposed to exertion, and unwilling to be amused. On Sunday he appeared better, but on Monday relapsed into a dull quiescent state, not seeking to leave his bed, disliking

the approach of other children, and unwilling to be disturbed, yet without any marked symptom of disorder. He continued without much alteration till Thursday, (17th,) appearing to have no particular uneasiness, except a feeling of tenesmus, and the inclination to remain a long time at stool. During this time he had taken some doses of mild laxatives. He had made no complaint of pain or griping; there was no swelling of the abdomen; and no pain had been observed or felt on handling him.

On Thursday evening, I was sent for in consequence of a sudden change in the symptoms, and on arriving found the child in a state of collapse,—his face pale, skin cold, and pulse nearly extinct. The abdomen was free from tension or swelling; there had been no vomiting; and I elicited no sign of uneasiness when I pressed upon it. He had been put into a warm-bath before I arrived, and had appeared pleased for a few moments by slapping the water in a playful manner, but soon let his head fall back, as if exhausted. Ammonia and brandy were administered, but he sank rapidly and expired, apparently quite conscious, and uttering his mother's name.

Post-mortem.—On opening the abdomen, the contents, at first view, exhibited nothing anormal; but, upon raising up the small intestines from below, all those portions that lay over the pelvis, or in contact with the cæcum, were seen in a state of intense inflammation, in parts nearly black from extreme congestion. Endeavouring to discover the cause of this violent circumscribed action, I found the appendix vermiformis in its natural situation, and scarcely changed in colour; but, on the left side, a small portion was softened and broken down, exhibiting an aperture, the sides of which were quite diffuent. In handling the appendix, which was not enlarged, a hard substance filling its calibre was felt, and upon slitting up the tube, a small concretion, about 3-10ths of an inch long, and 2-10ths of an inch broad, and nearly cylindrical, was turned out. It was of a dull white colour, as if calcareous, and pretty firm, though crushed without difficulty between the finger and thumb. No fecal matter could be detected as having escaped; indeed the concretion lay between the perforation and the natural opening into the gut.—*British American Journal of Medical and Physical Sciences.*

THE CILIARY MUSCLE

Is that greyish semi-transparent structure behind the ciliary ligament, and covering the outside of the ciliary body. It has been described as muscular by many of the older anatomists, especially by Porterfield, while others have assigned to it a different cha-

acter: lately it has been so regarded by Wagner and Dr. Wallace of New York, and we believe correctly. It belongs to the unstriped variety of muscle, and its fibres appear to radiate backwards from the junction of the sclerotica and cornea, and to lose themselves on the outer surface of the ciliary body. The more superficial fibres are in contact with, but scarcely adhere to, the sclerotic, and are inserted into the posterior part of the ciliary body; while the deeper ones seem to dip behind the iris to the more prominent parts of the ciliary processes which approach the lens. The ciliary muscle must have the effect of advancing the ciliary processes, and with them the lens, towards the cornea. The ciliary nerves pierce this muscle on their way to the iris, distributing to it many filaments which may be seen for the most part to cross the fibres.

The muscular nature of this structure is confirmed by its anatomy in birds, where it is largely developed, as noticed by Sir P. Crampton. We find its fibres to be of the striped variety, like the circular fibres of the iris in the same class, and to be supplied by ciliary nerves traversing the muscle in a circular direction. They likewise all radiate from the cornea, at the circumference of which they are attached to the deeper layers of the cornea proper, the elastic laminae being here exceedingly thin. * * * * * In the eye of the bird, the ciliary muscle, from its position and attachments, must necessarily approximate the lens to the cornea, and the reasons for considering the same part muscular in mammalia, and, if so, for ascribing to it the same function as in birds, have been already mentioned, and appear to us conclusive. We, therefore, on anatomical grounds alone, adopt this view, ably advocated by Porterfield, conceiving that when the eye is intent on near objects the ciliary muscle is contracted, the lens advanced towards the cornea, and the latter membrane, perhaps, rendered more convex by the traction of the muscle on its border by means of the cordage of the posterior elastic laminae; while in vision of remote objects, the lens is carried back towards the retina by the elasticity of the neighbouring parts. It is interesting to notice that this adjusting faculty of the eye is greatly impaired or altogether lost by extraction of the lens, or by paralyzing the ciliary and iridial muscles by belladonna. Dr. Clay Wallace considers that the ciliary muscle advances the lens by compressing the veins, and thus causing an erection or lengthening of the ciliary processes.—*Todd and Bowman's Physiology.*

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Sept. 25.

BIRTHS.	DEATHS.	Av. of 5 Sem.
Males.... 635	Males.... 498	Males.... 479
Females.. 635	Females.. 544	Females.. 461
1260	1052	940

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—Registrars' Districts, 129.
Population, in 1841, 1,915,104.)

West.—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	125
North.—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 366,303)	179
Central.—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	225
East.—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 393,247)	228
South.—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich .. (Pop. 479,469)	295
Total	1052

CAUSES OF DEATH.

ALL CAUSES	1052	Av. of 5 Sem. 940
SPECIFIED CAUSES	1047	935
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	339	236
<i>Sporadic Diseases, viz.—</i>		
2. Dropsy, Cancer, &c. of uncertain seat ..	111	103
3. Brain, Spinal Marrow, Nerves, and Senses ..	148	157
4. Lungs and other Organs of Respiration ..	208	226
5. Heart and Bloodvessels ..	30	25
6. Stomach, Liver, and other Organs of Digestion ..	94	94
7. Diseases of the Kidneys, &c. ..	10	8
8. Childbirth, Diseases of the Uterus, &c. ..	19	10
9. Rheumatism, Diseases of the Bones, Joints, &c. ..	6	7
10. Skin, Cellular Tissue, &c.	1	2
11. Old Age ..	44	50
12. Violence, Privation, Cold, and Intemperance ..	37	28

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	27	Convulsion.....	44
Measles	35	Bronchitis	36
Scarlatina	46	Pneumonia.....	39
Whooping-cough..	17	Phthisis	108
Diarrhoea	89	Dis. of Lungs, &c.	3
Typhus	77		
Dropsy.....	12	Teething.....	17
Sudden deaths ..	13	Dis. Stomach, &c.	4
		Dis. of Liver, &c.	9
Hydrocephalus..	35		
Apoplexy.....	24	Childbirth	11
Paralysis.....	15	Dis. of Uterus, &c.	8

REMARKS.—The total number of deaths was 112 above the weekly summer average, showing a considerable improvement in the health of the metropolis as compared with the preceding week.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	29.9
" " Thermometer	56.1
Self-registering do. max. 79.6 min. 33.1	
" in the Thames water ..	56.2 — 54.2
a From 12 observations daily. b Sun.	

RAIN, in inches, 0.7: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 1.7° below the mean of the month.

BOOKS RECEIVED FOR REVIEW,

Continued from the last volume, p. 1012.

Adulterations of Substances used in Medicine and the Arts, by L. C. Beck, M.D. Prof. of Chemistry, New Jersey. A Treatise on Diet and Regimen, by W. H. Robertson, M.D. 4th edit.—A Treatise on Diseases of the Air-Passages, by Horace Green, M.D.—Vaccination considered in relation to Public Health, by J. Marshall.—An Account of the late Epidemic of Scarlatina in Newcastle, by Edward Charlton, M.D.—Traité Pratique et Historique de Lithotritie, par le Dr. Civiale.—Steward on Dyspepsia.—The Physiological Anatomy and Physiology of Man, by Todd and Bowman, Part 3.—Tracts upon Health for Cottage Circulation, by H. Morley.—Consumption, its Prevention and Cure, by H. C. Deahon, M.D.—Annual Report of the Royal Edinburgh Asylum for the year 1846.—Pulmonary Consumption, by Sir C. Scudamore.—Anecdota Sydenhamiana, or Medical Notes and Observations of Thomas Sydenham, M.D.—On the Duties of Physicians resulting from their Profession, by the late Rev. T. Gisborne.—Braithwaite's Retrospect, January to June, 1847.—Learned Societies and Printing Clubs of the United Kingdom, by the Rev. A. Hume.—Remarks on Vivisection, by G. Macilwain.—A Letter to the Visiting Justices of the Lancaster Lunatic Asylum, by S. Gaskeil, F.R.C.S.—Supplement to some Account of the Letheon, or Who is the Discoverer? by E. Warren.—Report of the Montrose Lunatic Asylum for the year ending June 1847.—Dr. C. R. Hall on the System of the Great Sympathetic Nerve.—Causes and Treatment of Abortion and Sterility, by James Whitehead, F.R.C.S.—A Synopsis of Diseases of the Human Ear, by William Harvey.—Hassall's Microscopical Anatomy, Pts. 10, 11.—Health of Towns and of London Association, by Hector Gavin, M.D.—Report on the Recent Progress of Chemistry, by Dr. G. E. Day.—Ranking's Half-Yearly Abstract of the Medical Sciences.—Remarks on the Medical Relief of the Poor, by H. W. Rumsey.—Observations on Aneurism, by O'Brien Bellingham, M.D. &c.—A Few Remarks on the Expectant Treatment of Diseases, by A. A. Roberts.—Dr. Robertson's Guide to the Buxton Waters, 4th edition.—Cholera, Dysentery, and Fever: their Nature, Causes, and Treatment, by C. Searle, M.D.—Solly on the Human Brain, 2d edition.—Seventeenth Report of the Belfast Lunatic Asylum.—Fifty-first Report of the Friends' Retreat near York.—Dr. Carr on Consumption.—Unhealthiness of London, by Hector Gavin, M.D.—Report of the Health of London Association, by the same.—The Dublin Dissector, by R. Harrison, M.D. 5th edition.—Report of the Proceedings of the Pathological Society of London.—Inquest on Miss Sophia Dallett, with Appendix, by J. R. Cormack, M.D.—Dr. Snow on the Inhalation of Ether.—Guy's Hospital Reports, Vol. V. Oct. 1847.—Report of the Aberdeen Asylum, July 1847.—Markwick on the Urine.—Observations on Surgical Practice, by J. P. Vincent.

NOTICES TO CORRESPONDENTS.

RECEIVED.—Dr. Dick.—M. D.—Dr. Toos, Schaffhausen.—Mr. Macaulay.—Dr. Sloan.—Dr. Hare.

Lectures.

COURSE OF SURGERY,

Delivered in the years 1846 and 1847,

By BRANSBY B. COOPER, F.R.S.

Surgeon, and Lecturer on Surgery at Guy's Hospital.

LECTURE XII.

Ulcers (continued) — callous — inflamed — sloughing — irritable — sinuous — fissure in rectum — fistula in ano — varicose ulcer (case) — menstrual ulcer — general laws of treatment — ingrowing of the nails of the fingers and toes.

Callous ulcer.—It is not unfrequent for indolent ulcers to become converted into what has been termed a callous sore, in which case the edges of the ulcer are surrounded by a white, dry, insensible, elevated edge, which sometimes acquires a very considerable thickness, and even spreads over the surface of the sore.

This condition seems to depend on an atonic state of the skin, which tissue is more at fault than the granulations; and we frequently find it in cases of old cicatrices, the vitality of which is naturally languid, and therefore readily ulcerates, but with great difficulty heal again. Such callous sores are most prone to form in old persons. The best topical treatment is to soften their hardened edges by poultice, to scrape them off with a spatula, and to apply zinc ointment to the exposed cutis, as this indurated growth seems to be little else than morbid cuticle. Lunar caustic may be required if the zinc proves not sufficiently stimulating. The constitutional treatment need differ in no respect from that laid down for the cure of indolent ulcers.

The inflamed ulcer.—Scarcely an admission-day passes over at this institution without affording you an opportunity of observing this kind of ulcer, which results generally from the patients having continued their usual avocations from the first commencement of the sore up to the period when compelled to seek medical relief; and you will be surprised, gentlemen, if you watch the beneficial change produced by one day's rest, cleanliness, and the effects of a purgative. Frequently, on the day following the admission of such patients, I have wondered how I could have admitted so unimportant a case, scarcely recognising the ulcer I had seen only twenty hours before.

I will describe to you, gentlemen, the appearance of such ulcers. The granula-

tions are usually below the level of the skin; they run into one another, and have a great tendency to bleed; the discharge from them is sanious, serum mixed with red particles, and they are generally surrounded by a kind of areola of inflamed skin, but, at the same time, they are not particularly sensitive, and their granulations easily slough.

Now this condition, if it depends on constitutional causes, does not yield so readily as I have just described, where the state is referable wholly to local causes, and it is only to be determined by a strict investigation into the history of the case, whether we are to depend most upon constitutional or topical remedies.

You will always be safe, gentlemen, in confining to his bed a patient who is the subject of an inflamed ulcer; for, by the recumbent posture, you will be sure to relieve congestion of the vessels of the granulating surface. Purgative medicines should next be administered, and continued so long as any general plethoric tendency is indicated.

If the local inflammation be great, a few leeches may be applied around the wound; or, what is still preferable, if there be any enlarged veins which promise a supply of blood, they may be opened, and blood may be in that manner abstracted with less danger of consequent irritation. This practice should be adopted more especially when there is reason to fear an attack of erysipelas.

Having by this treatment sufficiently depleted the patient, restored the secretions, and removed the congestion of the vessels of the ulcer, it may be right to alter the plan entirely, and to support the constitutional powers of the patient.

You are therefore not to consider it as an incompatible system of treatment, because you hear leeches and purgatives ordered one day, and bark and wine the next; for this is a proceeding very frequently required when the inflamed sore originates in a local cause, and the constitutional disturbance is a consequence. Tepid poultices, mixed with a weak solution of the diacetate of lead, are the best local applications.

The most decisive indication of a favourable result from these remedies is the growth of the granulations, the secretion of healthy pus, and the restoration of the surrounding skin to its natural colour and temperature. These changes accomplished, the sore may be regarded as a healthy ulcer, and will heal readily with little further care beyond that which is necessary to maintain the health of the patient.

Sloughing or gangrenous ulcer.—If we fail in relieving the inflammation of an inflamed ulcer, and the intensity of the local action continues beyond that which the

vitality of the granulations can support, the character of the ulcer becomes completely changed: the granulations lose their redness and pyramidal shape; the surface of the sore no longer emits any discharge; the edges of the ulcer put on a livid appearance, and small vesicles form around the wound. Concomitant with these appearances there is usually a high degree of irritative fever, of more or less asthenic character, depending on the peculiar constitution of the patient.

The local treatment must be gently stimulating, and nitric acid lotion seems to be the best application (forty drops of the diluted acid to a pint of distilled water was the requisite strength). Stale beer-grounds poultice, or port-wine poultices, are often employed with great benefit. Mr. Martineau, of Norwich, used to order in such cases a poultice composed of equal parts of bread crumbs, powdered bark, chalk, and charcoal, and I have certainly witnessed a rapid separation of the slough quickly followed by a growth of healthy granulations after its employment. I suppose that it acts by absorbing the irritating ichorous discharge which is emitted from the sore. The solution of the chloride of lime in water is a most excellent application to gangrenous sores, the strength of the solution being of course regulated by the peculiar condition of the sore; the external application, whatever it may be, is and must be employed for the same purpose of promoting the separation of the gangrenous part by stimulating the subjacent granulations.

Constitutional remedies will also be required, as well as the topical means already described. Bark and the mineral acids, as well as wine and porter, will be found highly beneficial; at the same time keep in view the necessity of paying due attention to the state of the secretions, more especially the alvine; for, although the constitutional powers require maintaining, free evacuation from the bowels is a most essential consideration.

Irritable ulcer is distinguished principally by the high degree of sensibility of the granulations, which may either arise from constitutional excitement, or merely from the exposure of the sentient extremities of the nerves of the ulcerated parts. The granulations of these sores are unequal, both in reference to their size and degree of vascularity—sometimes pale, flabby, and exuberant; at others, hyperæmiated, and very liable to bleed, and the pus secreted is generally mixed with the red particles of the blood.

When the sensitiveness of the ulcer is not constant, and the pain experienced arises from the irritation produced by external agents, there is reason to believe that the irritability of the sore depends upon the

exposure of the nerves; and this condition is usually relieved at once by the application of nitrate of silver; while, on the contrary, when the pain is constant, calomel and opium are indicated, and such constitutional remedies as relieve irritability generally.

Care must be taken that pyalism is not produced by the calomel and opium, or the nervous excitement will be increased instead of diminished.

Gentle tonics are generally beneficial after the irritability of the nervous system has been subdued. Sarsaparilla, bark, mineral acids, camphor, and similar remedies, are those which are usually employed.

For a topical application, after having made use of the nitrate of silver, I almost invariably order the following lotion:—
℞ Pulv. Opii, gr. iij.; Mucilag. G. Acaciae, ℥i.; Liq. Calcis, ℥v. M. ft. lotio.

As soon as the irritability of the sore is diminished, the granulations rapidly assume a healthy aspect, and the character of the disease is at once changed.

Such a condition of ulcer not unfrequently attacks the rectum, under the form of a narrow elongated fissure running along one of the folds of the mucous membrane near to the orifice of the anus. The edges of the fissure are free from any callosity, and it bears a strong resemblance to the cracks which frequently affect the lips.

The most usual situation for the ulcer, as far as my experience goes, is at the posterior aspect of the rectum in the mesial line, although I have sometimes found it on the side of the bowel. The ulcer may involve merely the edge of the verge of the anus, or extend a considerable way up the intestine, but may always be detected by passing the finger into the rectum, when the nature of the sore is readily appreciated by the extreme pain which the patient experiences directly the finger comes in contact with the fissure.

The symptoms of the disease are highly characteristic: a burning pain is experienced during the act of defecation, which continues for a considerable time after each evacuation. During the intervals the patient enjoys comparative ease, but still occasionally suffers from heat and lancinating pain about the anus, but nothing to be compared to the agony produced by the passage of the feces over the ulcerated surface and through the sphincter, and which is commonly more or less in a state of spasmodic contraction.

The bowels are in these cases generally constipated; now this symptom involves the question as to whether this constipation is not produced rather by the unwillingness of the patient to evacuate his bowels than from any derangement of function. The best, and, indeed, the only positive evidence of this disease, is the introduction of the finger into the rectum, which, on being withdrawn,

will be marked with a streak of blood, and lead to the discovery of the size and position of the ulcer.

If the disease be allowed to remain for any considerable time, the patient's health becomes seriously affected by the constant suffering, and from the countenance one might suppose that the disease was of a malignant character. The digestive functions become deranged; the appetite fails; the slightest exertion, such as the act of coughing or blowing the nose, is sufficient to excite the pain; and any excess of diet is sure to aggravate all the symptoms.

Although this distressing affection will not yield to the remedies recommended in irritable ulcers in other parts of the body, its treatment is fortunately very simple. It consists in passing the fore-finger of the left hand up to the ulcer, and directing along it a straight probe-pointed bistoury beyond the very extremity of the fissure; then, turning the cutting edge towards the sore, you divide the ulcerated surface, as well as the fibres of the sphincter muscle, which are connected to its submucous aspects.

This procedure is usually sufficient, but if there be any reason to believe that suppuration has taken place in the cellular membrane beneath, the incision should be continued so as to divide the verge of the anus, and thus insure a free exit for the matter.

In the after treatment I strongly recommend (when the patient has recovered the effects of the operation) that he be directed to acquire the habit of evacuating the bowels at bed-time, instead of in the morning, so as to secure the six or eight hours' subsequent recumbent posture, and the certain receding of the rectum into the pelvis, which does not occur in a diseased state of this bowel if the patient follows his daily avocations immediately after the act of defecation. This disease I have certainly found more frequent in females than in males, and to prevail rather in the higher than in the humbler classes of life.

It is to Mr. Copeland that I am indebted for a knowledge of this disease, as well as for the operation, which I believe I may describe as almost infallible as a means of cure.

Sinuous Ulcer.—In some cases ulceration extends a considerable distance into the cellular membrane under the skin, forming what is called a sinuous ulcer, which is often very difficult to cure. Such a sore is likely, therefore, to be produced where the cellular membrane is most abundant: hence we find them very frequently seated by the side of the rectum, in the axilla, and in the inguinal regions.

These sinuous ulcers generally follow abscesses, and the pyogenic membrane becomes converted into a kind of mucous

membrane. In their cure they require to be laid open along the whole length of the sinus before they can be made to granulate; and generally the fibres of some muscles which influence the sore require to be divided before it can be induced to heal.

This fact, indeed, constitutes the pathology of the cure of fistula in ano, which is nothing more than one of these sinuses prevented from healing owing to the action of the sphincter ani.

Many surgeons have recommended stimulating injections for the cure of these sinuses, but I have never known any benefit derived from their use, and should, *a priori*, expect no good to result from them, unless the ingredient injected possessed an escharotic power sufficient to destroy the tissues with which it came in contact, and even then they would be less certain in their operation than the knife, and assuredly much more painful.

Setons are sometimes employed in these cases, and if used as a ligature, that is, tied with sufficient firmness to lead to the ulceration of the part included, they produce a cure much in the same way as the knife, and in cases where there has been reason to fear hæmorrhage, I have employed setons for the division of fistulæ with complete success.

After a sinus has been divided, the wound should be filled with lint, to secure the formation of granulations along its whole length.

In the groin I have sometimes found it extremely difficult to get the sinuses healed after they have been laid open, and the difficulty has appeared to arise from the motion of the hip-joint tearing the granulations asunder as quickly as they formed. This result may be obviated by putting the offending limb up in a straight splint, (Desault's) which completely prevents motion, and the wound rapidly heals. I have lately had several cases, both in public and private practice, fully corroborative of the utility of this method. One case, in particular, I attended with Dr. Gardner of Orme Square, Notting Hill, in which we cured, in a month, a sinus that had remained unhealed for several months before this plan was adopted. Tonic medicines, generous diet, and slight stimulus, will usually expedite the cure of such sores.

Varicose Ulcers.—Some sores have acquired this name from being found concomitant with a varicose condition of the limb upon which the ulcer is placed, and from its being supposed to depend upon the altered and diminished nutrition of the tissues, in consequence of the disease of the veins; most obstinate ulcers are certainly often found on the lower extremities, caused by a varicose state of the veins.

This state of vein, which leads to ulcera-

tion, is produced by their over distension with blood, preventing the adaptation of their valves; so that the vessel has to support an undivided column of fluid, instead of one the continuity of which is interrupted every two or three inches by the interposition of a pair of valves.

Nature in some measure compensates for this functional disturbance by giving to these diseased veins a tortuous course, so as to bring the parietes of a part of the vessel at right angles to the perpendicular column of the blood, and thus making it perform, in part, the office of a valve. Such a condition must necessarily alter the nutrition of the limb, the evidence of which is generally rendered first apparent by a tendency to desquamation of the cuticle, and inflammation of the true skin, which frequently inflames and ulcerates.

The most ordinary cause of varicose veins is constipation of the bowels, which becoming loaded press upon the iliac veins, retard the ready return of the blood from the lower extremities, and produce the venous congestion. The disease more frequently occurs, therefore, in the left extremity, in consequence of the accumulation of the feces in the sigmoid flexure of the colon, and the close proximity of this intestine to the left iliac vein. Constitutional treatment in these cases is principally to be relied on, and active purging most indispensably indicated: at the same time the recumbent posture must be strictly enjoined. The diseased limb should be supported by a well-applied bandage, so placed that the degree of pressure is perfectly equable over the whole surface of the limb. Should the veins not become relieved by this treatment, but remain distended, although at the same time quite free from pain, or any other sign of inflammation, blood should be extracted from them by opening them with a lancet, and you will be surprised, gentlemen, to find the quantity of blood which may in this way be abstracted without producing any constitutional disturbance: this appears to depend upon the fact that the blood in varicose veins is thrown out of the general circulating course, and remains comparatively stationary in the diseased vessels, and therefore not belonging to the systemic mass of blood.

Persons, have, however, been known to bleed to death from a varicose vein giving way under violent exertion. A case of this kind fell under my own observation. Capt. P., while skating, suddenly observed that his track was marked on the ice by blood; he soon became faint, fell, and died before he could be carried home. Upon examination it was found that the saphena vein, which was in a highly varicose state, had burst. After having opened a varicose vein

with a lancet for the relief of an ulcer, as I have already recommended, should there be any difficulty in checking the flow of blood, it may generally be stopped by placing the patient in the recumbent posture, raising the limb, bandaging, and applying evaporating lotions. But with all these remedies, you will often find very great difficulty in healing a varicose ulcer, and applications to the sore itself are required, as well as constitutional alterative medicines.

Black-wash poultices should therefore be applied to the ulcer; Plummer's pill given every night; decoction of sarsaparilla, with very small doses of bichloride of mercury, prescribed; generous diet allowed, and rather an active state of the bowels constantly maintained.

The obliteration of a varicose vein leading from the ulcer has been and is very generally recommended, as a mode of curing the sore; but hesitate, gentlemen, before you perform this operation; you may have heard of successful cases, but they much more freely gain publicity than those which prove fatal, and, as far as I have seen, the operation is futile, even if the patient survives; for as soon as the vessel is tied, other vessels become distended, and subject to the same varicose state.

No. 4, Philip Ward.—James Grover, æt. 51, labourer, residing at Farnham; married; 8 children. Healthy appearance, general health good, with the exception of occasional attacks of lumbago.

Admitted April 15th with a tumor on the inside of the right knee, about the size of a large walnut, very moveable in all directions, and quite smooth to the touch; when compressed it gives one the impression of a cyst containing a semifluid mass. He states that about six years ago he first perceived a swelling in this situation, at that time as large as a small marble, and it continued gradually to increase to its present size, but he was enabled, for a long time, entirely to disperse it by pressure, (to use his own words, "as if it contained air,") returning, however, as soon as the pressure was removed. Three weeks since, it was opened by a surgeon in the country, and more than half a teacupful of dark coloured matter, resembling coagulated venous blood, was discharged. This was not all contained in the tumor, but continued to issue out when pressure was made on the veins, which were then as now in a varicose condition. Strapping was applied tightly over the incision, which healed in a few days, but the tumor soon reappeared, and on his admission it was as large as it had been previous to the operation.

The tumor presses upon the long saphenous nerve, throughout the whole course of which, below the knee, he feels severe pain.

The superficial veins of the thigh appear in a normal condition. Ordered—to keep the leg at rest—Dec. Sarzæ, ʒviij.; Liq. Hydrarg. Bichlorid. ʒj.; R capiat. oechl. larg. ij. ter die.

April 21.—An exploring needle was passed into the tumor to-day, and a small quantity of mucous blood escaped.

27th.—An incision was made this morning into the varix of about an inch in length, and about 4 drachms of coagulum were turned out. The coats of the vein were found very much thickened; the vein leading to it from below appeared to be obliterated, but that above was pervious.

The wound closed with strapping; splint placed behind the knee, and secured in its position by a bandage, extending from the toes to the middle of the thigh.

28th.—Wound healthy, but there is a considerable degree of irritative fever. Ordered poultice.

29th.—Pyrexia all gone. He now went on well till May 6th; the wound granulated, and suppurated freely, and he had no bad constitutional symptoms.

On the 1st of May he was ordered some porter.

6th.—Had no fresh symptoms till last night, when he was attacked with headache, and he complains this morning of great nausea. He has vomited twice a quantity of bilious matter; no rigors; tongue slightly furred; pulse quick; skin hot and moist. The wound is very healthy and free from pain, except on pressure being made on the internal saphena vein, about 4 inches below the opening; there is no abnormal appearance externally; joints are free from pain.

7th.—Appears very much depressed.

10, A.M.—He cannot articulate his words distinctly; tongue white and clammy; pulse 92, extremely small; nausea still continues, and he has once vomited some more bilious matter; bowels open; stools dark-coloured and loose; skin still hot, but his extremities are cold; still pain on pressure as low down as the inner malleolus; no rigors.

2, P.M.—Attacked suddenly with severe rigors, which lasted half an hour, preceded by a low delirium; respiration hurried, and countenance indicative of great distress. It was impossible to count his pulse during the attack, but at its termination it was fluttering and 132; the skin, which had been pungently hot and dry, became suffused with a profuse perspiration, and when spoken to he answers in a very incoherent manner.

On removing the bandage, the course of the saphena major vein, and some of its branches, may be distinctly traced on the surface by a number of red lines, and on the

slightest touch he cries out with pain. Above the wound the veins of the thigh are not at all affected, nor is there any pain or swelling about the inguinal glands. Ordered Opil, g. ij. statim; brandy and water; hot water to the feet, and the whole limb to be enveloped in a linseed poultice. Liq. Ammen. Acet. ʒss.; Liq. Opil. Sedat. ℥v. Mist. Camph. ʒiss. 2tis horis.

5, P.M.—Surface of body still covered with a profuse sweat; appears unconscious of what is going on around, nor does he answer when spoken to.

From this time he gradually sank till half-past 12 the same night, when he expired, having been for some hours comatose. An inspection was made 65 hours after death, when all the superficial veins were distinctly marked out through the skin by a deep purple colour. The coats of saphena major vein, both above and below the varix, were much thickened, but no pus was discovered in any vein or elsewhere; all the internal viscera were very tough softened.

I believe I may say, therefore, that no means are known by which you can promise a cure, at least in bad cases, of varicose veins and consequent ulcers; and although much relief may be given by judicious treatment, permanent cure can never be anticipated with much confidence. Pregnant women are especially liable to varicose veins, and the frequent recumbent posture, with the extremities well supported by bandaging, should be strongly urged during the period of uterine gestation.

Menstrual Ulcer.—If females labouring under amenorrhœa happen to be the subjects of an ulcer from any cause, you will not unfrequently find periodical discharges of blood from the sore. Distinct premonitory indications of bleeding from the wound show themselves by a change in the appearance of the granulations, which become turgid and highly congested before blood exudes; this condition arises from a disordered function of the uterus, and it is by constitutional remedies principally that you can hope to restore that organ to its natural and healthy state. By the administration of the following remedies I have rarely found much difficulty in effecting the desired object:—R Pil. Aloes c. Myrrhæ, g. v. ft. pil. omni nocte sumenda; R Mistura Ferri co. ʒi.; Decoct. Aloes Co. ʒij. M. ft. haustus bis quotidie sumendus.

Warm baths two or three times a week usually expedite the cure: should the patient be of an irritable diathesis, opium may be advantageously combined with the other remedies. I have done my best, gentlemen, to describe to you the treatment of these different kinds of ulcer, so as to enable you to judge from the appearance of the granu-

lations whether they depend upon constitutional or local deterioration; much more may be necessarily required than I have alluded to, for it is impossible to lay down general rules for the treatment of every variety of sore, or even for the most simple kind, without leaving much for the exercise of your own judgment in the choice of the appropriate remedies for the particular case before you.

Consider well, before you attempt to prescribe, all the circumstances and causes which have produced the lesion; ascertain whether or not any specific poison is keeping up the diseased action; in that case, unless an antidote be administered to destroy its influence, the application of means to induce the healing of the wound can be but futile. Extraneous substances, such as exfoliating bone, foreign bodies introduced into tissues, as needles, &c. may keep up an ulcerative process, and no hope can be entertained of checking this ulceration unless the exciting cause be removed. This being effected, the ulcer becomes a healthy one, unless the violence of action produced by the introduction of the foreign body has destroyed the vitality of the tissues, or the constitution has become affected, and the restorative action disturbed in consequence.

The growing in of the nail into the soft parts of the fingers or toes often excites a high degree of both local and constitutional irritation, and unless the cause be removed, all efforts either to cure the ulcer or improve the constitution must fail. The means employed to produce this desired effect may be either palliative or radical—the former in recent cases will sometimes succeed; it is effected by scraping the nail until it is as thin as possible, and then, passing a probe under its inverted edge, it is to be turned up, and a piece of lint dipped into a solution of lunar caustic insinuated under it. I have rarely found this treatment prove permanently successful, for as the nail grows it again presses into the fleshy parts as before. The only effectual means I know of is the complete dissection of the nail from the sensible lamina—an operation which I confess requires considerable firmness, both on the part of the patient and surgeon. Those ulcerations which arise from specific actions, whether induced by malignant diatheses or peculiar animal poisons, will be described when treating of these particular diseases.

ROYAL COLLEGE OF SURGEONS.

GENTLEMEN admitted Members, on Friday, Oct. 8th, 1847:—C. Thompson—W. M. F. Chatterley—W. Garstang—C. H. Hitchen—D. Mackinder—J. R. Walker—A. Burton—R. D. Statter—L. W. Stewart.

INTRODUCTORY LECTURE,

Delivered at the Middlesex Hospital,
Oct. 1, 1847.

By R. G. LATHAM, M.D.

Lecturer on Forensic Medicine, &c.

There are certain facts of such paramount importance, that they not only bear, but require, repetition. The common duties of every-day life, and the common rules of social policy, are matters which no moralist states once for all: on the contrary, they are reiterated as often as occasion requires—and occasion requires them very often.

Now it is from the fact of certain medical duties, both on the part of those who teach and those who learn, being of this nature, that, with the great schools of this metropolis, every year brings along with it the necessity of an address similar to the one which I have, on this day, the honour of laying before you.

You that come here to learn, come under the pressure of a cogent responsibility—in some cases of a material, in others of a moral nature—in all, however, most urgent and most imperative.

To the public at large—to the vast mass of your fellow-creatures around you—to the multitudinous body of human beings that sink under illness, or suffer from pain—to the whole of that infinite family which has bodily, not unmixed with mental affliction, for its heritage upon earth—to all who live, and breathe, and feel, and share with yourselves the common lot of suffering—here, in their whole height and depth, and length and breadth, are your responsibilities of one kind. You promise the palliation of human ailment; but you break that high promise if you act unskilfully. You call to you all those that are oppressed; but you may aggravate the misery that you should comfort and relieve. You bear with you the outward and visible signs, if not of the high wisdom that heals, at least of the sagacious care that alleviates. Less than this is a stone in the place of bread; and less than this is poison to the fountain-springs of hope.

Not at present, indeed, but within a few brief years it will be so. Short as is human life, the period for the learning of your profession is but a fraction of the time that must be spent in the practice of it. A little while, and you may teach where you now learn. Within a less period still, you will practise what you are now taught.

And practice must not be begun before you have the fitness that is sufficient for it. Guard against some of the current common-places of carelessness, and procrastination.

Lawyers sometimes say "that no man knows his profession when he begins it." And what lawyers say of law, medical men repeat about physic. Men of that sort of standing in medicine which, like the respectability of an old error, is measured by time alone, are fondest of talking thus; and men of no standing of any sort are fondest of being their echoes. It is the current paradox of your practical men, *i. e.* of men who can be taught by practice alone. Clear your heads of this nonsense. It will make you egotists, and it will make you empirics: it will make you men of one idea: it will make you, even when you fancy it would do you just the contrary, the wildest of speculators. The practice of practical men, in the way I now use the words, is a capital plan for making anything in the world, save and except practitioners.

Well! this has seemed excursive, but it is not so: it is a reason against the putting off of your learning-time. When your first case comes, you must be as fit for it as you are ready for it.

A difference between old practitioners and beginners there always will be—so long at least as there is value in experience, and a difference between age and youth; but this difference, which is necessary, must be limited as much as possible, must be cut down to its proper dimensions, and must by no means whatever be permitted to exaggerate itself into an artificial magnitude. If it do so, it is worse than a simple speculative error,—it is a mischievous delusion: it engenders a pernicious procrastination, justifies supineness, and creates an excuse for the neglect of opportunities: it wastes time, which is bad, and encourages self-deception, which is worse.

A difference between old practitioners and beginners there always will be: but it should consist not so much in the quality of their work as in the ease with which it is done. It should be the gain of the practitioner, not the loss of the patient.

Now, if I did those whom I have the honour to address the injustice of supposing that the moral reasons for disciplinary preparation, during the course of study now about to be entered into, were thrown away upon their minds and consciences, I should be at liberty to make short work of this part of my argument, and to dispose of much in a most brief and summary manner. I should be at liberty to say, in language more plain than complimentary, and more cogent than persuasive, that you *must* be up to your work when you begin it. If you stumble at the threshold, you have broken down for after-life. A blunder at the commencement is failure for the time to come. Furthermore; malapraxis is a misdemeanor in the eyes of the law, for which you may first be mulcted by a jury, and afterwards be gibbeted by

the press. This fact, which there is no denying, ought to be conclusive against the preposterous doctrine which I have exposed: conclusive, however, as it is, it is one which I have not chosen to put prominent. Let a better feeling stand instead of it. Honesty is the best policy; but he is not honest who acts upon that policy only.

All this may be true; yet it may be said that the responsibility is prospective. "Sufficient for the day is the evil thereof." We'll think about this when we have got through the Halls and Colleges. You must give us better reasons for sacrificing our inclinations to our duty than those of a *paulo-post-futurum* responsibility." Be it so: you have still a duty, urgent and absolute—not prospective, but immediate—not in the distance, with contingent patients, but close at hand, with the realities of friend and family—not abroad with the public, but at home with your private circle of parents, relatives, and guardians. By them you are entrusted here with the special, definite, unequivocal, undoubted object—an object which no ingenuity can refine away, and no subtlety can demur to—of instruction, discipline, preparation. You not only *come* up here to learn, but you are *sent* up to do so: and anxious wishes and reasonable hopes accompany you. You are commissioned to avail yourself of a time which experience has shewn to be sufficient, and of opportunities which are considered necessary: and there is no excuse for neglect.

Great as are the opportunities, they are not numerous enough to be wasted; and limited as is the time in the eyes of those who only know it in its misapplication, is the period that a considerable amount of experience has sanctioned as a fair and average time for fair and average abilities, and for fair and average industry:—not a *minimum* period made for iron assiduity on the one hand, or for fiery talent on the other, but a period adapted to the common capacities of the common mass of mankind—a common-sense time,—a time too long or too short only for the extremes of intellect—too short for the slowness of confirmed dulness, too long for the rapid progress of extraordinary and rarely-occurring genius.

Of this time you are bound to make the most. It is your interest to do so for your own sakes; it is your duty to do so for the sake of your friends.

You come to the hospital to *learn*—you come to the hospital to learn in the strictest sense of the word. You come to learn medicine, as you would go—if instead of physic your profession were the law—to the chambers of a special pleader, a common lawyer, or an equity draughtsman. In this strict sense does your presence here imply

study—study exclusive, and study without any loss of time, and without any division of attention. You do not come here as a clergyman goes to the University; but as artists go to Rome—not to keep terms, but to do work.

I must here guard against the misinterpretation of an expression used a few sentences back. I wish to let nothing drop that may encourage the germs of an undue presumption. I expressed an opinion—which I meant to be a decided one—that the time allowed for your medical studies was full, fair, and sufficient,—so much so that if it prove insufficient the fault must lie in the neglect of it. *Sufficient*, however, as it is, it gives no opportunity for any superfluous leisure. It must not be presumed on. You have no odd months, or weeks, or days, or even hours, to play with. It is a sufficient space for you to lay in that knowledge of your profession which the experience and opinion of your examining boards have thought proper to require. I believe the amount thus required, to be, like the time granted for the acquisition of it, a fair amount. But it is not a high one, and it is not right that it should be so. Standards of fitness that are set up for the measure of a body of students so numerous as those in medicine, rarely err on the side of severity. They favour mediocrity; and they ought to favour it. It is safe: and that is all they have a right to look to. What they profess is never very formidable; and what they require is generally less than what is professed. But the time that is sufficient for this *modicum* (or *minimum*) of professional learning is not the time sufficient for the formation of a practitioner of that degree of excellence which the competition of an open profession, like that of medicine, requires as the guarantee of success. An examining board has but one point to look to—it must see that you can practise with safety to the public. It never ensures, or professes to ensure, that you shall practise with success to yourself, or even that you shall practise at all. In the eyes of an Examiner, as in those of a Commissioner of Lunacy, there are but two sorts of individuals; those that can be let loose upon the public, and those that cannot. In the eyes of the public there is every degree of excellence, and every variety of comparative merit or demerit.

Now as to the way of attaining these higher degrees of merit, and the rewards, moral or material, which they ensure; which follow them as truly as satisfaction follows right actions, and as penalties follow wrong ones. The opportunity we have spoken of. It consists in the whole range of means and appliances by which we here, and others elsewhere, avail ourselves of

those diseases that humanity has suffered, and is suffering, for the sake of alleviating the misery that they seem to ensure for the future. Disease with us is not only an object of direct and immediate relief to the patient who endures it, but it is an indirect means of relief to sufferers yet untouched. Out of evil comes good. We make the sick helpful to the sound; the dead available to the living. Out of pestilence comes healing, and out of the corruption of death the laws and rule of life. Suffering we have, and teaching we have, and neither must be lost upon you. It is too late to find that these objects, and objects like them, are repugnant and revolting. These things should have been thought of before. Your choice is now taken, and it must be held to. The discovery that learning is unpleasant is the discovery of a mistake in the choice of your profession; and the sooner you remedy such a mistake the better—the better for yourselves, the better for your friends, the better for the public, and the better for the profession itself.

Steady work, with fair opportunities—this is what makes practitioners. The one without the other is insufficient. There is an expenditure of exertion where your industry outruns your materials, and there is a loss of useful facts when occasions for observation are neglected.

See all you can, and hear all you can. It is not likely that cases will multiply themselves for your special observations, and it is neither the policy nor the practice of those who are commissioned with your instruction to open their mouths at random.

See all you can. If the case be a common one, you get so much familiarity with a phenomenon that it will be continually presenting itself. If a rare one, you have seen what you may seldom see again. There is every reason for taking the practice of the hospital exactly as you find it. It represents the diseases of the largest class of mankind—the poor; and, although in some of the details there may be a difference, upon the whole the forms of disease that are the commonest in hospitals are the commonest in the world at large; and *vice versa*. Hence, what you see here is the rule rather than the exception for what you will see hereafter. The diseases are not only essentially the same, but the proportion which they bear to one another is nearly so. I mention this, because there is often a tendency to run after rare cases to the neglect of common ones; whilst, on the other hand, remarkable and instructive forms of disease are overlooked, simply because they are thought the curiosities rather than the elements of practice. You may carry your neglect of common cases, on the strength of their being com-

mon, too far. You may know all about catalepsy and hydrophobia, and nothing about itch or measles. You may find that, of the two parties concerned, the patient and yourself, it is the former that knows the most about his complaint. You may live to have your diagnosis corrected by the porter, your prognosis criticised by the nurse. On the other hand, by missing single instances of rare disease, you may miss the opportunity of being able to refer to your memory rather than to your library.

I have given you reasons against being afraid of over-observation, and against the pernicious habit of neglecting the case because it is common, and that because it is rare—a common excuse for neglecting *all* diseases, and a popular reason for doing so. *Medicus sum, nihil in re medicæ a me alienum puto*, &c. Some minds, indeed, are so constituted that they can make much, very much, out of single cases, out of solitary specimens of diseases. The power of minute analysis is the characteristic of this sort of observation. It is just possible so to seize upon the true conditions of a disease, as to satisfy yourself, once for all, of its real permanent attribute—of its essence, if I may so express myself. And this being seen, you may, for certain purposes, have seen enough; seen it at one glance; seen it at a single view as well as others see it at a hundred. I say that certain minds are thus constituted; but they are rarely the minds of many men in a single generation, and never the minds of beginners. Before this power is attained your observation must be disciplined into the accuracy and the rapidity of an instinct; and to this power of observation—attainable only by long practice, and after long practice—a high power of reflection must be superadded.

No such power must be presumed on. If the student delude himself, the disease will undeceive him. The best practitioners, in the long run, are those whose memory is stored with the greatest number of individual cases—individual cases well observed, and decently classified. It is currently stated that the peculiar power of the late Sir Astley Cooper was a power of memory of this sort, and I presume that no better instance of its value need be adduced. Now the memory for cases implies the existence of cases to remember; and before you arrange them in the storehouse of your thoughts you must have seen and considered; must have used both your senses and your understanding; must have seen, touched, and handled with the one, and must have understood and reflected with the other.

I am talking of these things as they exist in disciplined intellects, and in retentive memories; and, perhaps, it may be objected that I am talking of things that form the

exception rather than the rule; that I am measuring the power of common men by those of extraordinary instances. I weigh my words, when I deliberately assert, that such, although partially the case, is not so altogether; and that it is far less the case than is commonly imagined. In most of those instances where we lose the advantage of prior experience, by omitting the application of our knowledge of a previous similar case, the fault is less in the laxity of memory than in the original incompleteness of the observation. Observe closely, and ponder well, and the memory may take care of itself. Like a well-applied nick-name, a well-made observation will stick to you—whether you look after it or neglect it. The best way to learn to swim is to try to sink, and it is so because floatation, like memory, is natural if you set about it rightly. Let those who distrust their remembrance once observe closely, and then forget if they can.

There are good reasons for cultivating this habit at all times, but there are especial reasons why those who are on the threshold of their profession should more particularly cultivate it. Not because you have much to learn—we have all that—nor yet because you have the privilege of great opportunities—we have all that also—must you watch, and reflect, and arrange, and remember. Your time of life gives you an advantage. The age of the generality of you is an age when fresh facts are best seized; and best seized because they are fresh. Whether you are prepared to understand their whole import, as you may do at some future period, is doubtful. It is certain that the effect of their novelty is to impress them more cogently on your recollection.

And this is practice—practice in the good sense of the term, and in a sense which induces me to guard against the misconception of a previous application of it. A few sentences back I used the phrases *practical men*, adding that those so called were men who could be taught by practice only. I confess that this mode of expression was disparaging: for the purpose to which it was applied it was meant to be so. It is a term you must be on your guard against. *Practice* is so good a thing of itself that its name and appellation are applied to many bad things. Slovenliness is practice, if it suits the purpose of any one to call it so; contempt for reading is practice; and bleeding on all occasions when you omit to purge is practice;—and bad practice too. Be on your guard against this: but do not be on your guard against another sort of practice: the practice of men who first observe, and then reflect, and then generalise, and then reduce to a habit their results. This is the true light for you to follow, and in this sense practice is not only a safe guide

but *the* safe guide. It is experience, or, if you choose a more philosophic term, induction. Theoretical men can be taught by this, and the wisest theorists *are* taught by it. When I said that practical men were taught by practice only, I never implied that they were the only men that practice could teach. Experience makes fools wise; but fools are not the only persons who can profit by experience.

See and hear—the senses must administer to the understanding. Eye, and ear, and finger—exercise these that they may bring in learning.

See and hear—the senses must administer to their own improvement. Eye, and ear, and finger—exercise these, that they may better themselves as instruments. The knowledge is much, but the discipline is more. The knowledge is the fruit that is stored, but the discipline is the tree that yields. The one is the care that keeps, the other the cultivation that supplies.

The habit of accurate observation is by no means so difficult as is darkly signified by logicians, nor yet so easy as is vainly fancied by empirics. It is the duty of those who teach you to indicate the medium.

The tenor of some of my observations runs a risk of misrepresentation. It has been limited. It has spoken of cases, as if there was nothing in the whole range of medical study but cases; and of observation, as if the faculties of a medical man were to take a monomaniac form, and to run upon observation only; of hospitals, as if they consisted of beds and patients alone; and of clinical medicine and of clinical surgery, as if there was no such a paramount subject as physiology, and no such important subsidiary studies as chemistry and botany. It is all hospital and no school—all wards and no museum—all sickness and no health. This has been the line that I have run on; and I feel that it may be imputed to me that I have run on it too long and too exclusively. Whether I undervalue the acquisition of those branches of knowledge which are collateral and subordinate to medicine, rather than the elements of medicine itself—which are the approaches to the temple rather than the innermost shrine—will be seen in the sequel. At present I only vindicate the prominence which has been given to clinical observation, by insisting upon the subordinate character of everything that is taught away from the bed, and beyond the sensible limits of disease. No single subject thus taught is the direct and primary object of your learning. The art of healing is so. You learn other things that you may understand this; and in hospitals at least you learn them with that view exclusively. If you wish to be a physiologist, chemist, or botanist, irrespectively of the medical appli-

cation of the sciences of physiology, chemistry, and botany, there are better schools than the Middlesex Hospital, or, indeed, than any hospital whatever. *There* they may be studied as mathematics are studied at Cambridge, or as classics at Eton—simply for their own great and inherent values. But *here* you study them differently, that is, as mathematics are taught at a military college, or as classics are taught at the College of Preceptors, for a specific purpose, and with a limited view—with a view limited to the illustration of disease, and with the specific purpose of rendering them indirect agents in therapeutics. If you could contrive the cure of disease without a knowledge of morbid processes, it would be a waste of time to trouble yourself with pathology; or if you could bottom the phenomena of diseased action without a knowledge of the actions of health, physiology would be but a noble science for philosophers; or if you could build up a system of physiology, determining the functions of organs, and the susceptibilities of tissues, independent of the anatomy of those organs and those tissues, scalpels would be as irrelevant to you as telescopes; and if these three sciences received no elucidation from chemistry, and botany, and physics, then would chemistry, and botany, and physics, have the value—neither more nor less—of the art of criticism or of the binomial theorem. What you are taught in the schools is taught to you, not because it is worth knowing—for Latin, and Greek, and Mathematics, are worth knowing—but because, before patients can be cured, they are necessary to be learned.

And, in order to be taught at all, they must be taught systematically. It is an easy matter to ask for a certain amount of these two collateral sciences—to pick and choose just the part wanted for use, to require just that *modicum* of botany which illustrates the Pharmacopoeia, and just those fragments of chemistry that make prescriptions safe, and urine intelligible. It is easy, I say, to ask for all this; but the art of thus teaching *per saltum* has yet to be discovered. The whole is more manageable than the half. What it may be with others is more than I can tell; but, for my own particular teaching, I would sooner take the dullest boy from the worst school, and start him in a subject at the right end, than begin at the wrong end with the cleverest prizeman that ever flattered parent or gratified instructor. Bits of botany and crumbs of chemistry are less digestible than whole courses.

Thus much for those studies that make your therapeutics rational. Some few have spoken slightly of them—as Sydenham, in the fulness of his knowledge of symptoms, spoke slightly of anatomy, or as a Greek sculptor, familiar with the naked figure,

might dispense with dissection. They are necessary, nevertheless, for the groundwork of your practice. They must serve to underpin your observations.

And now we may ask, whether, when a medical education has been gone through, you have collected from it, over and above your professional sufficiency, any secondary advantages of that kind which are attributed to education itself taken in the abstract? Whether your knowledge is of the sort that elevates, and whether your training is of the kind that strengthens?

Upon the whole, you may be satisfied with the reflex action of your professional on your general education—that is, if you take a practical and not an ideal standard. It will do for you, in this way, as much as legal studies do for the barrister, and as much as theological reading does for the clergyman; and perhaps in those points not common to the three professions medicine has the advantage. Its chemistry, which I would willingly see more mixed with physics, carries you to the threshold of the exact sciences. Its botany is pre-eminently disciplinal to the faculty of classification; indeed, for the natural-history sciences altogether, a medical education is almost necessary. Clear ideas in physiology are got at only through an exercised power of abstraction and generalization. The phenomena of insanity can be appreciated only when the general phenomena of healthy mental function are understood, and when the normal actions of the mind are logically analyzed. Such is medical education as an instrument of self-culture: and as education stands at present, a man who has made the most of them may walk among the learned men of the world with a bold and confiding front.

I insist upon thus much justice being done to the intellectual character of my profession—viz. that it be measured by a practical, and not an ideal, standard. Too much of the spirit of exaggeration is abroad—of that sort of exaggeration which makes men see in the requisites for their own profession the requisites for half-a-dozen others—of that sort of exaggeration which made Vitruvius, himself an architect, prove elaborately that before a man could take a trowel in his hand he must have a knowledge of all the sciences, and a habit of all the virtues. Undoubtedly it would elevate medicine for every member in the profession to know much more than is required of him—yet this is no reason for our requiring much more than we do. Such a notion can be entertained only through a confusion of duty on the part of those who direct medicine. Their business is the public safety; and the position of their profession is so *only* so far as it affects this. Trusts are intended for the benefit of any one but the trustee.

Two objections lie against the recommendation of extraneous branches of learning in medicine: in the first place, by insisting upon them as elements of a special course of instruction, they are, by implication, excluded from a general one; in the second place, they are no part of a three years' training.

Concentrate your attention on the essentials. I am quite satisfied that as far as the merits or demerits of an education contribute to the position of a profession, we may take ours as we find it, and yet hold our own. Nevertheless, lest the position given to medicine by its pre-eminent prominence, in conjunction with the church and bar, as one of the so-called learned professions, should encourage the idea that a multiplicity of accomplishments should be the character of a full and perfect medical practitioner, one or two important realities in respect to our position should be indicated. We are at a disadvantage as compared with both the church and the bar. We have nothing to set against such great political prizes as chancellorships and archbishoprics. We are at this disadvantage; and, in a country like England, it is a great one: so that what we gain by the connection, in the eyes of the public, is more than what we give; and the connection is itself artificial, and, as such, dissoluble. It is best to look the truth in the face—we must stand or fall by our own utility.

Proud to be useful—scorning to be more—must be the motto of him whose integrity should be on a level with his skill, who should win a double confidence, and who, if he do his duty well, is as sure of his proper influence in society, and on society—and that influence a noble one—as if he were the member of a profession ensured to respectability by all the favours that influence can extort, and all the prerogatives that time can accumulate. As compared with that of the church and bar, our hold upon the public is by a thread—but it is the thread of life.

Such are the responsibilities, the opportunities, and the prospects, of those who are now about to prepare themselves for their future career. We who teach have our responsibilities also; we know them; we are teaching where Bell taught before us; we are teaching where ground has been lost; yet we are also teaching with good hopes, founded upon improved auguries.

APOTHECARIES' HALL.

NAMES of gentlemen who passed their examination in the Science and Practice of Medicine, and received certificates to practise, on Thursday, October 7, 1847:—John Owen, Mold, North Wales.—John Pierce Bowling.—Walter Brown, Bridlington, Somerset.

Original Communications.

ON
MORBID SYMPATHIES;
OR THOSE ASSOCIATED STATES OF DIS-
ORDER WHICH MOST FREQUENTLY
PRESENT THEMSELVES TO
THE PHYSICIAN.

*Being the Croonian Lectures delivered at
the Royal College of Physicians in
March and April, 1846.*

By JAMES COPLAND, M.D. F.R.S. &c.

[Continued from p. 622.]

THE next head to which I shall direct attention is the *sympathy which exists between the digestive organs and the actions of the heart and lungs*. It is very obvious that, owing to the media of association to which I have referred, the disorder of any of these organs will naturally produce a sort of reciprocal disorder in other organs. Thus, increased excitement of the nervous system will produce excitement of the vascular system; and exhaustion or debility of the organic nervous system will produce debility of those organs supplied by it. It may be considered an axiom, that increased excitement, or its opposite, namely, exhaustion or debility, however produced, are attended by co-ordinate states of these characteristics in the several organs I have enumerated. So obviously is this the case, that it is unnecessary for me to enlarge upon it. If you study the actions of the heart and lungs in various diseases, especially in fevers during the stage of excitement, and during the period of exhaustion, you will perceive a certain degree of co-ordinate exaltation or depression of function, according as the case may be.

But there is another circumstance which to a certain extent will affect these organs—namely, *contiguity of position*. It is obvious that the states of the heart and lungs will be very materially affected mechanically by states of the digestive organs: for instance, where there is morbid distension of these latter organs, respiration and circulation will become disordered: hence it is that there is so very fre-

quently a deranged state of the circulation and of respiration in individuals in whom the nervous energy is weak, and where the contractile power of the parietes of the heart is to a certain extent weakened also. The contractile actions of the heart are much influenced by the distension of contiguous viscera. Flatus distending the stomach, and rising to the œsophagus, often produces intermittent or irregular pulse and various consecutive phenomena. This is frequently seen in cases of flatulency of the digestive organs. Very serious affections supervene in the case of hysterical and nervous patients where the flatus rises up in the form of globus hystericus, producing inordinate distension of the œsophagus, with spasm above or below, or both above and below, the seat of this distension. The phenomena remarked in hysteria, in colic, and in flatulent distensions of the colon, may further illustrate the influence of mechanical distension of parts of the digestive canal upon the functions of the heart and lungs; and hence it is that, when the nervous and muscular powers of the heart are impaired, or when the vital expansive power of the lungs is weakened, that flatulent distensions of the stomach or of the colon increase the mischief. The number of morbid sympathies that I shall have to mention in the limited period that is allowed me, prevents me from illustrating fully this subject: hence my remarks are now suggestive, rather than elucidative. However, I shall have occasion in another place, and under other circumstances, more fully to discuss the topics which here I must notice in a very cursory manner.

In considering the relation of the circulating and respiratory functions, it is unnecessary to do more than to notice the very great influence which the latter produce upon the former,—the great influence produced by the atmosphere during respiration, and the advantages that accrue from respiring pure air, not only in promoting a normal state of the blood, but in strengthening the locomotive functions. Air and exercise are the best restoratives that we possess—the principal tonics that we can employ in removing disorder. Those medicinal tonics which are frequently substituted for these, owing either to the circum-

stances of the case, or to the views of the physician, are generally more or less stimulants also, and may be injurious, and indeed are often hurtful, when injudiciously employed. But when the patient can have change of air,—when he is able to undergo a change, and can be duly exposed to the air and to the sun's influence, and more especially when he can take sufficient exercise in the air,—the vital energies are thereby developed, and due assimilation of the food, and healthy changes produced on the blood by the respiratory organs and cutaneous surface, are the results.

I need only briefly refer to the intimate sympathy between the *digestive and the respiratory functions, surfaces, and organs*. It rarely occurs that the respiratory mucous surface is much affected without the digestive mucous surface being also more or less disordered, or that the latter is seriously deranged without some disorder or susceptibility of disorder being manifested by the former, the association being clearly referable to the nervous system in the more immediate effects, and to the vascular system in the progress of the disorder. But affections of the mucous or villous surfaces of these distinct organs, although often thus appearing in succession—the one arising or depending upon the other—often also occur contemporaneously and co-ordinately. This form of association frequently is the result of endemic causes and of epidemic influences, the morbid impression of these causes often extending rapidly, and manifesting its effect upon the digestive organs soon after it has acted upon the respiratory functions. Catarrhs, influenzas, hooping-cough, and other epidemic disorders which proceed from the states or vicissitudes of the atmosphere, and prevail at certain seasons, especially manifest this association; and those more formidable epidemics which arise from an atmospheric contamination, caused by the emanations proceeding from the sick, or from numbers of living creatures confined in a limited space, or from dead vegetable and animal matter, evince the same association, although in a much more remarkable manner, and greatly heightened by contamination of the fluids and soft solids of the body.

When the atmosphere contains only

a small or moderate amount of malaria, or of animal emanations, or a quantity insufficient to contaminate the air to a pestilential extent, or even to cause agues or remittents, disorders of the digestive organs, associated with affections of the respiratory and circulating functions, frequently result. In large towns and cities, especially where a humid and close air is more or less contaminated with animal exhalations, the prevailing disorders of the digestive organs are very often associated with affections of the respiratory organs, more particularly with chronic or asthenic bronchitis, or with congested states of the lungs. This association is frequent amongst the children of the poor; either affection predominating over or masking the other, owing to the intensity or combination of the causes.

Whether those causes affect children, adults, or the aged—more especially if the more ordinary physical conditions and vicissitudes of the atmosphere have added to them, animal emanations, putrid effluvia, and insufficient ventilation—the effects produced seldom consist of a simple or specific state of disease, but of an association of maladies; one or two assuming a more distinct or prominent form, according to the intensity of the efficient agent, to the nature of concurring influences, and to the state or predisposition of the patient's constitution. This complication becomes still greater, and much more serious, if these causes not only injuriously impress the organic or ganglionic nervous system, but also, either through the medium of this system, or still more directly, contaminate the circulating fluids,—the contamination arising both from the impairment of depurating processes performed by the various emunctories, and from the passage of injurious agents into the blood during respiration.

Physicians who observe closely the morbid conditions constantly coming before them, must have remarked, especially in large towns, where numerous injurious agents are in almost continued operation, and amongst persons who attend the least to the healthy states of the digestive and excreting functions, that, when the digestive functions are much impaired, or when the digestive mucous surface presents those phenomena which may rationally

be referred to chronic irritation, numerous associated disorders soon present themselves. The hepatic functions are deranged; often also the bowels are affected; and ultimately even the excretions from the skin and kidneys betray more or less disorder. The results of these morbid conditions, or more frequently the contemporaneous mischiefs, comprise changes in the nervous and vascular systems—functional changes in the organic nervous system, being followed by impairment of the excreting or depurating actions, and this impairment by an altered state of the blood itself; this last acting upon the former, and aggravating them. As long as vital power or resistance to the injurious agents is not entirely overthrown, various vicissitudes occur in the course of functional disorder, in the states which the several organs implicated present, and in the consequences which accrue in respect of each, under the influence of either aided or unaided vitality. But not unfrequently various serious phenomena, threatening the duration of life, appear, owing to contingent causes and morbid predispositions. It is thus we so frequently observe in practice, among persons who have been previously out of health, who have been intemperate and dissipated, who have suffered from functional disorders of the stomach, or liver, or bowels, or kidneys, or from an association of two or more of these, that far more serious maladies are superinduced; that, owing to the morbid state of the blood from impaired action of the emunctories, and to the disposition of irritation or inflammation of membranous parts to spread in these circumstances, erysipelas thus often appears in the seat of an abrasion or injury, especially in certain atmospheric conditions; that the pharynx or fauces, or both, sometimes with their connected glands, become affected with a spreading or asthenic inflammation; that the lesion, owing to continuity of texture and weakened vital resistance, proceeds either along the œsophagus to the stomach, or, what is still worse, it extends from the pharynx to the epiglottis, or even down the trachea, causing distressing paroxysms of cough, or threatening and even causing suffocation from closure of the glottis, or fatal congestion of the lungs. The lesion thus first mani-

festing itself in the fauces or pharynx, may actually even commence in the stomach, and extend upwards along the œsophagus to the pharynx, without the œsophageal affection being either recognised or prominently developed, until the more sensitive and susceptible pharynx is reached. Indeed, it is not infrequently observed, that acrid eructations from a dyspeptic stomach, or owing to a state of gastro-enteric irritation, excite an asthenic form of inflammation of the pharynx and posterior fauces, which sometimes spreads in one or other of the directions just pointed out, either involving merely, or chiefly, the upper portion of the œsophagus, or implicating more especially the epiglottis and larynx, or even also the trachea.

These are some of the more serious or extreme morbid associations observed between the digestive and respiratory organs; but others of a slighter grade are much more common; these are stomach-cough, the catarrhus stomachicus, catarrhus saburralis, &c. of older writers; the association of gastro-intestinal irritation with catarrh or with bronchitis, or other affections of collatitious or even of distant viscera.

The sympathies of the digestive organs with the brain and with the organs of sense, and of the latter with the former, are sufficiently manifest. But it is very frequently by no means easy, when the associated morbid conditions come before us in practice, to determine the organ primarily affected, and most probably the source or centre of the associated affections. The *media* of morbid association in many of these complications are obviously, and primarily, the ganglial and the cerebro-spinal nervous systems, as already explained. But cases are not few, which acknowledge not only these media, but also the vascular system—a morbid condition of the circulating fluids. When the blood is loaded with effete matters, or is not sufficiently acted upon in the liver, or changed by the several depurating organs, or by the lungs, it affects the brain, producing more or less disorder according to the nature of the existing impurity. It may give rise only to lassitude, or to a state of apathy, or more or less lethargy. It is not improbable that the lethargic state observed after a full meal, is partly caused

by the passage of chyle into the blood, which, to a certain extent, changes the state of this fluid, and affects the brain. When the blood is more seriously altered, when it is affected by obstruction of the excretion of bile, and when it is still more remarkably changed, both in quantity and quality, by disease of the kidneys, the effect upon the brain is often serious, and in the latter case even fatal. In more common cases and circumstances, and in those of much more frequent occurrence, impaired digestive function is followed by imperfect assimilation of the chyle; this latter more or less affects the blood, and the state of the blood thus produced often affects the sensibility of the brain and nervous system, either temporarily or at intervals, even before the actions of the emunctories are manifestly impeded or otherwise disordered.

The *organs of sense* often sympathise with disorders of the digestive organs. Those of sight, hearing, smell, and taste, are severally weakened or rendered more susceptible of impressions in some instances, or less so in others, when the functions of digestion are imperfectly performed, owing to the impairment of the ganglial nervous power actuating the digestive organs having extended to the organs and nerves of sense, with which the ganglial nerves are intimately connected, especially as respects the cerebral and cervical ganglia and plexuses. Nor should it be overlooked, that, when the influence or power of the ganglial nerves, which supply the vessels and membranes secreting the fluids which enable the nerves of sense to perform their functions, is insufficiently exerted or is depressed, these fluids are then insufficiently secreted, the membranes imperfectly nourished; and consequently the sensorial surfaces, and the terminations of the nerves of sense in these surfaces, are not in a fit state to receive impressions, and are incapable of transmitting them so vividly and perfectly as if the organic or ganglial nervous system duly discharged its duty.

The *locomotive apparatus* sympathises more or less with the state of the digestive and assimilating organs. The former, however, may not be much affected when the latter are

slightly disordered; but if the disorder of the digestive functions continue long, or if it be great,—if the organic nervous or vital energy of these organs be much reduced or exhausted by previous excitement, and, still more remarkably, if this depression of vital energy have, owing to its continuance or severity, given rise to a morbid condition of the circulating fluids, or to an excrementitious plethora, the locomotive power will suffer more or less. The joints are particularly disposed to manifest disorder when the digestive and assimilating functions are imperfectly performed, and the secreting apparatus of the joints suffers more especially. When urea, or its elements, accumulate in the blood, or, indeed, when either these or other excrementitious elements accumulate in the circulation; or when mal-assimilated or other injurious matters are conveyed into the circulating fluids, and more particularly when the functions of the liver, of the bowels, and of the kidneys, betray disorder, the joints then often become seriously affected. If the history of various diseases affecting the joints be carefully traced, and their several morbid relations observed, it will very often be found that impaired digestion and assimilating function, as well as impeded excretion, has long preceded, and often still more remarkably attends, the affection of the joint. *Gout* furnishes the most remarkable instance of this morbid association; but rheumatism also displays it. Other disorders hereafter to be mentioned, as hysteria, also betray the connection between them and affections of both the joints and the digestive organs. The sympathy, in these morbid associations, is obviously dependent upon the ganglial nervous system and its connection with the sensory spinal nerves, and is increased and rendered more permanent, especially in gout, by changes in the circulating fluids, and by imperfect elimination of effete materials, or of the ultimate products of assimilation and animalization, by the several emunctories.

The *sympathies of the reproductive organs with the functions of digestion* are often obvious. They will be more particularly noticed in the sequel; but I may now observe that debility of the latter often deranges the former, or

predisposes to most of the disorders to which the reproductive organs, especially of the female, are liable. There is, however, a mutual action and reaction between disordered conditions of these organs and the organs of digestion; and even in those cases which occur so frequently in practice, where the association of these disorders is very remarkable, it is often very difficult to determine which of the organs are primarily in fault. Many cases of chlorosis, of amenorrhœa or dysmenorrhœa, or even of menstrual obstruction, of hysteria, and of leucorrhœa, are more or less dependent upon disordered digestion and assimilation, whilst others originate, as will be mentioned hereafter, very differently, and consecutively derange the digestive functions.

[To be continued.]

IPPECACUANHA IN THE BITES OF VENOMOUS ANIMALS. BY H. COLLET, ESQ., OF WORTHING.

SOME years since, the daughter of — T., Esq., about eight years old, had her hand upon the companion-ladder of the East India Ship, *Malcolm*, when she suddenly felt it bitten by something which was not observed, but the two specks on her finger plainly showed the marks of a centipede's fangs, of which many of very considerable size had been caught. As surgeon of the ship, I was called to her assistance, and found her in very great suffering; and, after exhausting all the remedies usually considered useful,—oil, spirit, laudanum, ammonia, &c.,—I recollected having been informed by an old officer, in a previous voyage, that the best cure for the bite of a rattle-snake was ipecacuanha, I fetched a bottle of wine of ipecacuanha from the chest, and gave it to the mother to apply locally, at the same time telling her that I had not the slightest faith in the remedy; but, to my surprise and delight, she came out of her cabin in two minutes, to tell me it had stopped the pain instantly. I requested her to reapply it if necessary. The pain returned once, when it again immediately and entirely relieved it. If so minute a quantity as is contained in the wine could be attended with such good effects, I think much more might be expected from its use in the concentrated form of emetine.

Mr. Collet has never had an opportunity of testing the remedy in a second case, but many of his friends have found it useful in the sting of wasps.—*Prov. Med. and Sur. Jour.*

CASES OF ANEURISM OF THE AORTA,

WITH REMARKS.

BY CHARLES J. HARE, M.D. Cantab.

Physician to the St. Marylebone General Dispensary.

CASE I.—*Sacculated false aneurism, causing partial absorption of the sternum. History. Symptoms referable to aneurism. Symptoms of phthisis. Physical examination of the chest. Diminution in the size of the aneurismal tumor, and in the symptoms caused by it. Progress of the tubercular disease of lungs. Difference in the force of the pulsation of the two carotids. Edema of the left arm from phlebitis three weeks before death. Post-mortem examination. Tubercles more numerous in the lower than in the upper lobe of the left lung. Some dilatation of the aorta, and a large aneurismal sac at its arch; the latter almost completely filled with coagula. Pressure of aneurism on trachea, œsophagus, &c.*

CASE II.—*Great dilatation of the ascending portion and arch of the aorta. History. Dyspnoea and palpitations. Severe attacks of angina pectoris. Physical signs of hypertrophy and dilatation of the heart, &c. and of dilatation of the aorta (dilatness, double rasping sound, &c. to right of sternum). Anasarca. Orthopnoea. Autopsy.*

REMARKS.—*Diagnosis of aneurism: frequent absence of any rasping sound or murmur in cases of sacculated aneurism. Dysphagia; peculiar character of the voice and dyspnoea: their causes; accordance between the symptoms, physical signs, and post-mortem appearances. The tendency of the aneurism towards cure. Supposed antagonism between tubercular disease of the lungs and aneurism. Causes of the disease. Angina pectoris; its connection with organic disease of the heart, &c. Treatment.*

CASE I.—James H——, æt. 45, was admitted a patient of the St. Marylebone Dispensary on the 17th of April, 1845.

He was rather short in stature, not strongly made, but of good conformation; his complexion pale, which he

stated it had always been. He was a wheelwright, and had been so all his life, but during the preceding ten days had not followed his occupation owing to illness. He was married. Had been accustomed to have sufficient food, and usually had from two to four pints of beer daily, and sometimes a glass or two of spirits; this was the quantity he had taken since the time he was an apprentice; he used sometimes to get tipsy, but had not been so once during the preceding 12 or 15 months. He had resided during the previous six years in a front kitchen, not very dry, but with a boarded floor. His parents were dead: the father died between the age of 30 and 40, but of what disease was not known;—the mother at the age of 70, with a severe cough: a brother (æt. 21) and a sister (æt. 30) died of consumption, but two brothers and two sisters remaining alive were, so far as he knew, healthy.

Though he had never considered himself a strong man, yet he had always enjoyed good health, and had never, since he could remember, required any medical advice, except seven years before, when he cut his head by a fall from a high loft: he was then in Middlesex Hospital for a week. He considered himself in health until three weeks before I saw him, but I afterwards learnt from his wife that his appearance had altered during the last four years, and especially during the last two, in which period he had also somewhat lost flesh: for two years he had likewise had some cough, though not constantly, and for twelve months past a little expectoration, but had never brought up any blood, nor had the sputa been streaked with it. From about the end of November he had not been able to lie down flat in bed at night, owing to a sensation of oppression when in that position, but had been more or less propped up: this symptom had slowly but gradually got somewhat worse up to the time when I saw him. For two months before he came under my care he had occasionally brought back some of the food which he was swallowing, but on the 21st of March, while eating, some food seemed to be so firmly arrested in its passage down the throat that he was nearly choked, but by violent coughing, and with much difficulty, he got it up again. None of

these symptoms, however, attracted much of the patient's attention until, about three weeks before he applied to the dispensary, his cough becoming worse, he supposed that he had taken cold: the expectoration continued but slight, and up to that time he had not experienced any pain in the chest or shoulders, nor had he had any hoarseness. A few days after this, however, he began to feel pain, when he was quiet at home, at the top of the right scapula, and about the shoulder joint, but it did not trouble him at all while he was at work, nor was there any pain in the back or chest. From the time when his cough became worse, he felt some soreness in the throat on swallowing, yet only to a very trifling amount. On the evening of the 7th of April he had some meat for supper, and on swallowing a piece larger, he supposed, than the rest, he had another attack similar to that of the 21st of March, and now for the first time he felt a pain on the right side of the sternum between the first and second ribs: he did not then examine that part of the chest, and was not aware of any swelling there, but on the following morning (April 8th), just before getting out of bed, he perceived a tumor at the spot which had been painful on the previous evening, and on placing his hand upon it he felt it beat distinctly; he felt sure that it was then quite as large as when I first saw it. He had been to his work as usual on the Monday (the 7th.), but on going out on the Tuesday morning he found his breathing so very short that he was obliged to return home again, and had not worked since. After that his cough changed in character, becoming somewhat hoarse; his voice, too, became hoarse, and both these symptoms continued up to the period of his admission to the dispensary.

When I examined him on the 18th of April he complained of weakness and some lassitude, but of no aching of the limbs or general pains; he was rather thin, but not greatly emaciated; the skin was pale and anæmic, but not more so, he said, than was usual with him. While sitting, his position, I observed, was constantly with the body inclined forwards, one arm and elbow at the same time resting on the knee, and he told me that since the tumor appeared he had not been able

to rest in bed, for any length of time, upon the *right* side, but that he slept on the left one somewhat propped up, and that in that position he was very easy: when he lay on the right side, he felt pain about the top of the sternum. His wife stated that when he was asleep his breathing was so tranquil as to be scarcely audible. There was no swelling of the face, arms, or any other part, nor had there ever been any. His intellect was good: he slept well, nor was the sleep disturbed by dreams: there was no headache; he had never had any giddiness or fainting; the expression of his countenance was natural. His breathing was short when he walked out, or moved or exerted himself in any way, but he did not find any inconvenience from it when he was quiet; and he thought it was not then so bad as it had been about ten days before, when he first perceived the tumor. When I saw him the respiration was not hurried, and for two days he had been quite free from any pain either in the seat of the aneurism or in the shoulder. His voice was somewhat hoarse, or rather husky, but there was no pain over the larynx: the cough had a similar character, and the louder he coughed the more was this peculiarity of it perceptible; it appeared to be an expulsive effort without a sufficient closure of the rima glottidis: the paroxysms did not trouble him much, coming on perhaps six or eight times a day, and less frequently at night: each one would consist of a few consecutive coughs often unattended by any expectoration. He had never suffered from pain in any part of the *chest* until the attack of the 7th of April, but from about the 2d till within two days of the period when I saw him, he had frequently had some pain in the right shoulder, even when quite still. He neither suffered from, nor had been subject to, palpitation of the heart. On swallowing solids, he felt pain at a point just to the right of the sternum, near the top, at the point where the pulsating tumor was visible, and not in any deep-seated part near the spine. This was relieved as soon as he drank anything to assist deglutition, and it entirely ceased when the hard morsel was completely swallowed; so that he never ate without having something by him to drink at the same

time. He experienced no difficulty in swallowing until the food reached a point opposite the top of the sternum, and none whatever in taking fluids. Deglutition did not produce the pain he had sometimes felt in the shoulder. The tongue was somewhat furred on each side of the centre; appetite very good; rather more thirsty than natural, requiring some water once or twice during the night; had no nausea or vomiting; bowels regular; urine natural in quantity, but rather high-coloured; no pain in abdomen, or in the region of the liver. Pulse 95, small, easily compressed, and not presenting any other peculiarity.

He was not aware of any cause which could have given rise to his illness: never received any blow on the chest, nor had any accident, except the one previously mentioned. Had not had any treatment further than having taken a few antibilious pills.

On examining the chest, there was a tumor, which could be *seen* distinctly to pulsate, situated between the first and second ribs, and close to the right border of the sternum. It was about two inches in diameter, circular in shape, and its most prominent part raised the skin from a quarter to half an inch above its natural level. The swelling thus presented the appearance of a small segment of a largish ball placed under the skin. It had caused the absorption of the right border of the sternum between the first and second costo-sternal articulations. The pulsation felt when the fingers were applied was very strong, and gave the idea of the parietes of the aneurismal sac being very thin. The pulsation over the tumor was much stronger than at the apex of the heart, and, on applying the stethoscope, was so forcible as to raise the head, and to communicate a very unpleasant sensation to the ear. There was no murmur whatever, but the first and second sounds of the heart were heard over the tumor: the former fully as loud as over the heart itself; the latter not quite so distinctly. The pulsation just alluded to was entirely confined to the tumor. The superficial veins were somewhat more marked over the upper left half of the thorax than over the right corresponding region; the difference, however, was not very great. Neither side expanded much on inspiration, but the

left rather more than the right. Percussion was quite dull over the tumor, and very slightly so over the right side of the chest anteriorly, but not over the left side: it was *equally* resonant in the right and left supra-scapular regions, but perhaps not quite so much as natural. Respiration was puerile over the upper half of the left lung anteriorly, and almost so at the humeral end of the right infra-clavicular region; in the right mammary region, however, it was bronchial, with some mucous rhonchi, and near the summit of the sternum on that side, the bronchial character of the respiration was very marked. The respiratory murmur was louder in the right than in the left supra-scapular region, but the expiration was not prolonged as it was on that (the right) side anteriorly. In the lower part of the right scapular region, respiration was a little more bronchial, and vocal resonance considerably more transmitted than in the left one; in the infra-scapular regions these differences were less distinct, but were still somewhat more marked on the right than left side. Posteriorly, also, there were some mucous rhonchi in the lower lobes of both lungs. The heart's action was not strong: its apex was too low, and too much to the left side, pulsating at a point an inch and a half directly below the nipple. The sounds were quite healthy.

I ordered him to avoid every kind of exertion; when he walked, always to do so slowly; not to attempt work of any kind; to abstain from spirits, wine, and beer; but allowed him a little meat daily to dinner.—To take 4 grs. of blue-pill, followed by a black draught, the next morning, so as to operate on the bowels; and the following mixture:—Tincture of Digitalis, ʒij.; Camphor Mixture, ʒx.; Nitrate of Potash, ʒij.—To take two table-spoonfuls every six hours.

This was the only medicine which he took, except a pill of the compound extract of colocynth occasionally to regulate the bowels. When I examined him on the 29th of April, the tumor appeared slightly less prominent than it was when I first saw him, and the pulsations, both as felt by the fingers and through the medium of the stethoscope, were certainly less strong. For a while he kept strictly to my orders; but, finding himself, as he thought,

considerably better, he returned about the beginning of May to his work as a wheelwright, doing, however, only the easiest part of the business, and that but for an hour or two a day as he felt able,—being fatigued, as he afterwards told me, by the end of that time, and therefore returning home. He stated, that working in this way did not make his breath so short as walking even slowly.

He felt as well as usual on Sunday, the 11th May, and had taken a short walk in the morning; but in the evening, at supper, he found more difficulty than usual in swallowing his food, its course being obstructed opposite the upper border of the sternum, and part of it came back again, not being able to pass that spot. On the 12th the obstruction was such that he was not able to swallow either solids or liquids, and he believed that neither the one nor the other entered his stomach that day. This, indeed, continued to be the case until the morning of the 13th (Tuesday), when I was sent for; and during the previous night he had not slept, owing to pain and a sensation of uneasiness in the neck. I found him propped up in bed, and leaning towards the left side, that being his most comfortable position. Besides the total inability to swallow just mentioned, he suffered from some, though not intense, dyspnoea, and the face and hands were a little livid. Pulse about 100, but a little fuller than I had previously found it. Physical signs as before. I ordered him to be bled in the sitting posture to ʒvj., if he could bear it, but not more than ʒijj. were taken away before he became faint. *Immediately* after the bleeding he was able to swallow.

May 14th.—The blood drawn yesterday is buffed. He did not sleep well last night, though he was very much easier yesterday after the bleeding, and continues so to-day. Cough is, however, rather troublesome, and he expectorates some tenacious mucus, but there is no blood in the sputa, nor has there ever been any. Bowels rather confined.—To take Inf. Sennae Co. ʒj. occasionally. Ipecacuanha Wine, ʒij.; Oxymel of Squills, ʒss.; Compound Infusion of Linseed, ʒix.; Tincture of Digitalis, ʒij.—two table-spoonfuls every six hours.

May 15th.—The bowels having been

opened after I saw him yesterday, he has not taken any of the senna mixture. During the past night he has slept eight hours, awaking but once during that time, and the cough and expectoration have both diminished. He has now no pain in the region of the aneurism, but complains of some about the seventh cervical vertebra.

He continued taking the same medicines, the symptoms not varying materially, until May 27th, when he complained more of a pain which had troubled him for a few days, about the inner border of the right scapula: it was a constant, aching pain, but worse when he coughed; and he stated that the expectoration felt to him to come from that part. Had no difficulty in swallowing fluids, and could eat solids, but had to take very small quantities of them at a time. Bowels not sufficiently open. No palpitations. Pulse 102, rather jerking. Had not been out since the 11th.

The *physical signs* were the same as before, but the pulsation of the aneurismal tumor was certainly less strong, both as felt by the hand and through the stethoscope. Largish mucous rhonchi were heard in right scapular and infra-scapular regions, and some also in the lower part of left side posteriorly. — A blister was ordered to be applied to the painful part, and he was to continue the mixture as before.

Although the blister did not draw very well, the pain was removed by it, and he had not afterwards any return of it. His breathing, too, became considerably easier; he coughed less — very little, indeed, except at nights, and he slept better. On the 1st of June his feet became a little swollen, but that disappeared the following day. On the 7th he was again able to attend at the dispensary.

June 21st. — No pain in chest. Has an attack of coughing of about five minutes' duration once a day, and once in the night time, with a thinnish semi-transparent expectoration, sometimes but not always frothy. Besides these paroxysms he has a slight hacking cough. Voice is not so hoarse as it was. Pulse 132, small, but regular. He is somewhat thinner than he was, exceedingly pale, and complains of weakness. — To take the mixture (May 14th) occasionally when

the cough is troublesome. To take an ounce of the *Mistura Ferri Composita* three times daily.

June 28th. — Complains more of dyspnoea than of any other symptom, being obliged, in consequence of it, to stop every few minutes when he is walking. No pain in the chest, back, or shoulders; perspired considerably last night. Two days ago he took against my orders some gin and water (weak, he says). Expectorates very little.

[To be continued.]

THE SCOTCH EPIDEMIC FEVER, OF 1843-4.

By JOHN RICHARD WARDELL, M.D. Ed.

Late President of the Royal Physical and
Hunterian Medical Societies,
Edinburgh; &c. &c.

[Continued from p. 508.]

c. Diuretics. — Respecting the evils resulting from a want of proper action in the kidneys some remarks have been offered in a previous paper.* The frequent loss of functional power in the renal organs in fever is a fact too well known to practical men to be especially insisted upon here. Considering, however, the mischief which is likely to accrue from the not unusual complication of nephritis, or congestion of these organs, the physician is ever solicitous that the secretion be not only given off in full quantity, but of normal character, that is, possessing a due proportion of solid matters — which matters, from the excess of waste that there is in fever, are considerably increased, and if retained cannot fail to exert a deleterious influence. Again, the bladder, sphincter vesicæ, &c. from the morbid impressions made upon the nervous and organic nervous systems, often lose in some degree their proper functions, and, hence, retention of the secretion and its partial absorption; therefore we cannot be too careful in our investigations respecting the voiding of the urine, and its natural characteristics. In the epidemic, the nitrate of potash, in conjunction with the carbonate of soda, or the liquor of potash and a little of the tincture of henbane, given every two or three hours, seldom

* Paper No. IX.

failed to produce copious micturition. The common spirits of nitric ether, or neutral salts, also answered the purpose. When the urine is acid, as it generally is in fever, it is advantageous to administer an alkali, and no drug seems to answer better than the liquor of potash, added to which may be given the compound tincture of opium or of henbane: on the whole, perhaps, the latter is preferable, on account of its having a less tendency to confine the bowels and affect the head. When there was much acute pain over the region of the kidneys, local or (if very acute) general blood-letting seemed highly conducive to the restoration of these organs to their natural functions, and Dr. Cormack says that hot applications, as fomentations, poultices, &c. to the lumbar region, were followed by happy effects. From the congested condition in which the kidneys were so often found on inspection, it is highly probable that if cupping and leeching the loins had been more frequently adopted than they were it might have been with advantage.

f. Mercurials.—The employment of mercury in fever has, by various authorities of eminence, been much recommended, but whether it possess that great virtue which some have ascribed to it is very doubtful, and certainly the question is quite open to controversy. Its advocates contend that it stimulates the capillaries; and thus, upon the Cullenian theory, by overcoming their constriction tends to resolve the disease. Dr. Hamilton, of *Lynn Regis*, affirms that small and oft-repeated doses of mercury and opium have the effect of equalising the circulation, and thus preventing local congestion. When administered with a view to its alterative qualities there is one fact not unfrequently witnessed—viz. the difficulty that there is in affecting the mouth when the skin is hot and dry, and the pulse frequent, and certainly, if it be beneficial in fever, such does not become manifest until some degree of salivation is produced. When given as an alterative, whatever preparation of the mineral may be selected, opium is administered along with it, and there are good reasons for believing that the beneficial results which follow are not wholly attributable to the mercury, but may be partly ascribed to the opium, as

neither, given alone, answers so well: this opinion is held by Dr. Alison, whom I have repeatedly heard express it as his conviction. The soothing influence of calomel and opium lessen the nervous irritability, and thus the effect is extended to the circulation, which is rendered more tranquil and natural. The calomel or blue pill are of eminent service in emulging the liver, and stimulating the biliary apparatus to more energy of action, but when that viscus was so preternaturally stimulated as it was in the seven days' fever, the exhibition of mercurials seemed contra-indicated. When employed as an alterative, the following form was very frequently used in the wards, of which can now be most particularly spoken of—viz. twelve grains of calomel, three of powdered opium, in conserve of roses for eight pills, one of which was taken every six hours, or three grains of blue pill with quarter grain doses of opium at the same periods. Small doses of the mercurial chalk powder, with rhubarb and soda, answered in promoting the secretions, and it may be added that these drugs are highly valuable in fever on account of their safety; the gentle action which they maintain in the canal, without being followed by irritation, and when there is tendency to ulceration in the mucous membrane I am convinced that this combination is particularly eligible. Blue pill and colocynth with hyoscyamus was efficacious, and, when not contra-indicated, five or six grains of calomel, followed by a dose of castor oil, was often used. Calomel, in conjunction with the gum camphor, as recommended by Dr. Copland, was, I believe, prescribed when there was sinking of the vital powers, but of this mode of treatment in the seven days' fever I cannot express much from personal experience. It is no doubt an excellent formula in truly typhoid cases, and in that fever I have seen the mercury and camphor freely used. Mercury pushed to salivation has been considered as a prophylactic for fever—a doctrine exceedingly doubtful, and certainly not at all times borne out by facts, because individuals who have been under salivation for syphilis have been known to contract a fever.*

* Drs. Copland and Graves.

g. Rubefacients, Blisters, &c.—To excite the external vessels to an increase of action, will, of course, on the principles of derivation, be likely to relieve the deeper-seated structures of their preternatural fulness; and thus it may be said that, by instituting a new affection, nature is allured from that which had morbidly preceded. In some instances, where there is much irritability in the system, the application of any irritative agent, instead of being followed by any marked benefit, is only productive of further disturbance; this, however, is not very common (except in the very young), and where such remedies as bloodletting or other depletants have been employed. When the high temperature and quick pulse are on the decline, and nature rather requires stimulation, it is at such stage that this order of remedies is indicated and found of service. Hot applications, as dry flannels, heated bran and salt, flannels wrung out in hot water, and applied to the painful part, were often used; and after fomentation had been employed, sprinkling the flannel with spirits of turpentine was not unfrequently succeeded by great relief. It may here be observed, that I have always known wet or moist applications far more effective than dry; perhaps the heat is more intimately brought in contact with the surface, or that the relaxation is more favoured by the absorption of aqueous particles into the capillaries, which thus dilate their contents, tend to overcome their constriction, and promote their circulation. Many times, in cases of spasm, I have known hot bran, hot salt, &c. of little service, whilst, on the contrary, efficient fomentation has immediately produced signal benefit. Sinapisms to the epigastrium, hypochondria, hypogastria, &c. were had recourse to often with advantage. Croton oil rubbed over the stomach, hypochondria, &c. night and morning, until an eruption appeared, which, by acting as a mild and continuous blister, was of great utility. The common fly blister was extensively ordered to different parts; and in many instances of cephalic affection, sometimes where there was subeulcus and other unwelcome symptoms, a large blister to the vertex was very advantageous, and procured much benefit.

A. Medicines employed in the pre-

vention of vomiting.—In an earlier paper of this series,* the reader may perhaps remember that sickness and vomiting were, during the first days of the febrile paroxysm, frequent symptoms, and sometimes so persistent as to be quite distressing to the patient. The effervescent powder, in milder cases, was prescribed, and found of service. One or two grains of powdered opium produced relief when the affection was very urgent and long-continued. Creasote, in doses of four or five drops in a little water, or syrup and water, had the best effects, occasionally removing the symptom at once. Prussic acid, in one or two drop doses, administered in a little of the solution of gum arabic, syrup, or other bland liquid, answered very well. When the vomited matters were very bilious, and unaccompanied by pain and tenderness in the hypochondria and epigastrium, five or six grains of calomel, followed by a dose of castor oil, rhubarb, or the cathartic infusion, would arrest the affection. The most beneficial remedy was one used by Dr. Alison, and which I saw in numberless cases employed with essential service during the time that I had the care of that gentleman's patients in the clinical wards: this was from forty to sixty drops of the solution of morphia in two or three ounces of starch gruel, given as an enema; in fact, the prescription seldom failed in producing an immediate and beneficial effect. There is, as previously observed, an advantage in administering medicines by the rectum, and especially in a case like that of distressing sickness, when the mucous membrane of the stomach has become so morbidly irritable as to reject the most simple matters, and much more so those of a medicinal nature. Impressions produced at either extremity of the intestinal canal are readily transmitted throughout its entire course, owing to the continuity of tissue and the interlacement of nervous filaments; and thus it is that a sedative being applied at the inferior extremity of the digestive surface, would be communicated to its distal parts. Again, the intense irritability of the *prima viæ* might prevent the absorption of agents submitted to their surface, and thus the system be more tardily brought under their

* Paper No. VI. Section VI.

influence. This, however, was a method that might, in like instances, be safely tried, and with much surety of being followed by manifest advantage. Hot cloths, cupping, leeches, sinapisms, fomentations, blisters, &c. were also at times employed.

i. Astringents.—These remedies were of course occasionally demanded. When diarrhoea seemed dependent upon the irritative properties of the bile, a secretion, it must be recollected, very often given off in a morbidly increased manner, the compound chalk mixture, as also the compound chalk powder with opium, were of much service. When dysenteric symptoms were manifest, the superacetate of lead, in the form of mixture or pill, or small and oft-repeated doses of calomel and opium, were prescribed. Catechu and kino were employed with advantage. Enemata with laudanum also were ordered. In some cases, where there was increased secretion of the bronchial tubes, the preparations of squill and acetate of lead answered the desired purpose.* In certain instances, where there was copious and continued sweating, with a laxity of the skin, the aromatic or diluted sulphuric acid, in doses of from ten to twenty drops, had the power of astringing the cutaneous exhalants; and if griping was produced, the addition of the compound tincture of opium or henbane checked such tendency.

j. Tonics.—During convalescence tonics were highly valuable in promoting the restoration of health; and in a debilitating disease like fever, the digestive organs become so weakened, as to be long unequal to their proper functions; hence such medicines are of essential service. The infusions of gentian, calumba, and cascarrilla; the mineral acids along with a little of the syrup of ginger or orange peel; the sulphate of quinine in mixture with the diluted sulphuric acid or in pill with the extract of gentian or chamomile, all had satisfactory effects. In cases of hepatic affection, the nitro-muriatic acid was valuable. The preparations of iron, as the sulphate, tincture, &c. in conjunction with some convenient adjunct, were prescribed. During the intermissions of the fever I tried if the use of quinine would prevent the re-

currence of the relapses, but without arriving at any decisive conclusion; such experiments of course being prompted by the anomalous fever presenting certain though ill-defined characteristics of the intermittent type.

k. Stimulants.—All descriptions of wines, spirits, and malt liquors, were at times given; but those most frequently in use were port-wine, porter, whiskey, and ale. When a powerful stimulant was indicated, hot whiskey and water was ordered, because it possesses all the stimulative qualities of brandy, and, especially in Scotland, is much cheaper. Port-wine was extensively used, and with much benefit. Often have I seen the tongue coated, and the patient remain *in statu quo*, when four, six, or eight ounces of wine daily have produced the most marked results, the organ becoming cleaner, the skin softer, the pulse slower and more natural, and the general strength improved: in fine, the patient has then rapidly recovered. It must be remembered, however, that from the statistics which have been given, a great majority of the patients who sought admittance into the Edinburgh hospitals were the squalid and often half-fed inhabitants of the courts and wynds of the Old Town, whose pale visages and delicate frames contrastedly differed from the rural poor; and this fact was quite in accordance with the prevalent notions that patients in urban communities will ever, *ceteris paribus*, need a more stimulative mode of treatment than those from country districts; but independent of this, the type of the fever demanded a more stimulative class of remedies than epidemics which had occurred some years ago,—a statement not only borne out by comparing the present forms of fever with the sthenic types that used to occur, but by the testimony of those physicians who have witnessed many visitations of fever. Dr. Alison informed me that, many years back, the late Dr. Gregory, at the request of the Board of Managers of the Edinburgh hospitals, with a laudable view to economy, was induced to ascertain if whiskey and water would not equally supply the place of the more expensive port-wine. Dr. Gregory, after an ample trial, came to the conclusion that whiskey would not answer so well as wine. There is some difficulty, after a few doses, in prevailing upon the patients to perse-

* Professor Henderson, Dr. Cormack, &c.

vere in taking the spirit and water, a circumstance which does not in like manner obtain with the wine; besides, the latter is by far more grateful to the capricious palate, is not so liable to disorder the stomach, and appears better calculated to insure the effect desired. During convalescence wine and porter were often ordered as tonics, and with much advantage, especially in the instance of confirmed tipplers, who improved much more rapidly under a moderate allowance of their wonted stimulus. Porter, by containing a grateful bitter, and not possessing so much saccharine matter as ale, was more extensively used; besides, it was less liable to produce disorder in the stomach and bowels. In private practice the Indian beer is, on this account, very eligible. In table No. VI. it is seen that out of 450 patients, 123, being 1 in 3.65, or 1 in 3½, or 2 cases out of 7, required wine, and 37, or 1 in 12, had spirits. In table No. VIII., out of 80 cases, 10, or 1 in 8, had wine; 8, or 1 in 10, spirits; and 10, or 1 in 8, ale or porter;—hence, out of 530 cases, 1 in 281, or nearly 1 in 3, required stimulants, and, as many were allowed stimulants after they were removed to the convalescent wards, the average might be stated as still higher.

l. Drinks.—So long as the febrile paroxysm continued, the patients were, as might have been anticipated, craving for drinks; but as the temperature of the body was often so very high, the thirst was perhaps more urgent than usual. It is always desirable to allow, if possible, such beverages which, if taken in large quantities, might not disorder the stomach and bowels. Toast-water, barley-water, cold gruel, tea, the mineral and vegetable acid drinks made according to the formulæ* of the hospital, were generally used. Dr. Cormack gave some of his patients, when the thirst was very great, the crystals of citric acid to suck, which considerably lessened the desire for liquids. Patients in the higher ranks of society can, of course, be allowed many other descriptions of beverage which can be taken with safety, and have the advantage of being pleasant to the taste, as lemonade, iced waters, orange water, &c., which, as the reader is aware, in public institutions, are, on

account of the expense, beyond the reach of the inmates. On the whole it is desirable that the patient should not drink too copiously, lest disorder in the stomach and bowels should ensue.

m. Diets.—With respect to the diets, these were of course altered according to the state of the fever, its duration, degree of intensity, complication, &c. In the time of the febrile paroxysm, a non-stimulating diet was ordered, and improved as soon as that could be done with safety. When the patient became convalescent, soups, strong broths, animal food, &c. were allowed. It is always incumbent on the part of the physician to be particularly solicitous respecting the food given to fever patients, as there is no doubt whatever that the most serious, nay fatal terminations, result from being too venturesome in permitting them to return to the stronger and more indigestible kinds of food. In cases of typhus I have repeatedly known aggravations of the disease resulting from this error, and in some instances death was traceable to such cause.

n. The application of cold.—Before concluding those observations on the curative measures adopted in the distemper, the use of cold applications may be briefly adverted to. The late Dr. Currie, as the reader is doubtless aware, has been one of the most strenuous advocates of this method; and there is no doubt, when used according to proper precautionary rules, it is highly to be commended. Its indiscriminate employment would be exceedingly injurious, nor could it fail to be at times productive of the most serious consequences. When the temperature of the body is very high, when the pulse is full, quick, and bounding, the patient restless, and the skin feels hot and tingling to the touch, sponging with tepid or cold water is generally followed by much benefit, and the patient becomes so cool and comfortable as to frequently fall over into a tranquil and continuous sleep, from which he wakes composed and refreshed: this was often the case in the epidemic. In the employment of this remedy the feelings of the patient will ever be our best guide, and if it be grateful, it may with great hope of benefit be used; but if on the contrary, and he afterwards feels chilly, has headache, small pulse, we may rely upon it that the measure

* Paper No. V.; foot-note to Section No. II.

would have been better omitted. It is at an early period of the disease when cold seems to be most indicated; during the stage of reaction, when there is high vascular excitement, and consequently a preternatural degree of animal heat, it then will seldom do harm, but rather be followed by benefit. In some instances in which there was much cerebral affection, pouring a continuous stream of cold water over the shaven scalp was productive of much advantage. Dr. Hughes Bennett informed me that the douche was very commonly employed in the Continental hospitals, especially in the Hôtel-Dieu, La Charité, and at Vienna and Heidelberg, of which he could speak from personal observation.

Such is a brief enumeration of the chief measures adopted in the treatment of the seven days' fever; and in this detail it has been endeavoured to generalize from the practice of the several physicians who had the charge of the patients in the various establishments, rather than to give the isolated treatment of one individual; and in thus presenting this general view of the curative means, it would of course have been impossible, without prolixity, to embrace all considerations associated with this particular part of the subject. It is, I am aware, the fashion in these days to imitate the now too prevalent custom of the Gallic physicians, who well nigh concentrate the whole of their attention to the study of the pathology, and the morbid appearances discoverable after death, rather than to therapeutical researches. It is true that, after having gained a correct knowledge of a disease, the main difficulty is overcome; and it is equally true that such acquired knowledge is only useful so far as it can be brought to bear in the prevention or cure. In the treatment of this disease, as in all others, no trite and undeviating rules can be laid down, and much must ever necessarily be left to the discretionary powers and common-sense conclusions of the practitioner; and it must also be confessed that, in our treatment of this affection, measures prompted by the deduction of theory and refined speculations do not always appear as efficient and correct, whilst facts often force themselves upon the mind exemplifying the wonderful efforts of nature

alone, convincing us of the potency of her own powers in the restoration of normal action, or, in other words, in the re-establishment of lost health. Where she seems unable to follow out her own salutary course of procedure, it is ours to narrowly observe in what these means consist, the manner in which she appears to accomplish her ends, to remove such obstacles as obstruct her course, and, copying her efforts, tender that assistance of agents which science has discovered, observation led to employ, and the long course of human experience taught as the best to be administered.

[To be continued.]

CASES AND

REMARKS ON THE INHALATION OF ETHER.

By THOMAS SMITH, M.D.
Cheltenham.

[Continued from page 591.]

CASE II.—*Strumous ophthalmia: employment of ether for the purpose of ascertaining the condition of the transparent membranes of the eye.*

On the 18th of January, a little girl, aged two years and four months, came under my care for a scrofulous affection of the eyes, which had continued with unabated severity for upwards of eight months. From my interrogatories I became acquainted with the following particulars connected with the case. Father short in stature, dark eyes and hair, sullen complexion, active disposition, bilious temperament, enjoying excellent health. Mother tall, stout, jet-black hair, dark eyes, long eyelashes, pale flabby face, lips fissured, arid, subject to indigestion, and much troubled with leucorrhœa. She had borne five children, of whom three were dead; of these one had died from the effects of measles, and two from water in the head. Some months prior to the decease of the last child, by hydrocephalic fever, its eyes had become affected in a somewhat similar manner to the little girl whose case I am about to describe, but which disorder had, some time previous to its last illness, terminated in ventral opacity of the cornea of one eye. This circumstance greatly increased the

fears of the parents for the ultimate safety of their child. Whilst anxious, if it were possible, to ward off that most formidable malady under which two of their children had already succumbed, and which appearances certainly justified them in believing threatened their infant daughter, they were equally desirous that no measures should be left untried to prevent the occurrence of that deformity and deprivation of vision which the other child would have experienced had it been spared. At the same time, I was informed that I should find it a difficulty almost insurmountable to examine the little girl's eyes, as two medical men had previously failed in their endeavours to accomplish it.

On entering the room I found the child standing before her mother's knees. Her open hands pressed against her eyes; head buried in her parent's lap; her feet beating time on the floor to a tune she was humming. This I afterwards ascertained was her constant habit whilst up. When in bed she lay with her face covered with her hands on the pillow, her knees were drawn up under her body, and, with a swinging motion of the trunk, she rocked about from side to side for hours together during the night, rarely falling asleep until two or three o'clock in the morning. On my speaking to the child she screamed vociferously, and strenuously opposed every attempt to obtain a view of the eyes. The eyelids externally were swollen and red, clean acrid water continually gushed from betwixt them. This secretion excoriated the cheeks, and greatly added to the child's misery. The head, face, ears, and neck, had for some time past been covered with a pruriginous eruption, which latterly had attacked the *alæ nasi*, lips, nates, and hands. A purulent discharge issued from the right ear; the glands of the neck enlarged; great heat and itching of the nostrils; upper lip swollen; face puffy; tongue covered with a dirty yellow fur; breath fetid; body slender; bowels retracted, hard, and bound; alvine evacuations sometime slimy, sometimes white, ejected with pain and difficulty, and in small quantity. Nates covered with pustules, some of which had coalesced and formed large and extensive scabs. Urine in small quantity, frequently

passed in bed; on two occasions the nurse noticed it to be white like milk; seldom complained of headache; appetite variable; skin hot and dry; extremities emaciated; nights extremely restless. On the arm two large cicatrices from vaccination. The mother thinks the child has never been right since she was vaccinated; blames vaccination as the cause of losing her other children; says they were never so healthy afterwards. From the struggling and screaming of the child I found it impossible to separate the eyelids without endangering the cornea should it unfortunately prove to be ulcerated; I therefore deemed it prudent to desist rather than run the risk of increasing the mischief. I resolved, however, at the next visit to renew my efforts when the child was asleep. Ordered—*R. Hyd. Chloridi*, gr. ij.; *Pulv. Scammonii*, gr. j.; *Pulv. Rhei*, gr. iv. sit pulv. ex gelatinâ horâ somni sumend. o. u. *Magn. Sulphat.* ʒiv.; *Magn. Bicarbonat.* ʒj.; *Vin. Ant. Pot. Tart.* ʒss.; *Mannæ Opt.* ʒiv.; *Aquæ Cinnam.* ʒiiss. *M. capt.* ʒij. omni mane et meridie.—To have a warm bath every night; the head to be shaved; eyes to be well bathed three times a day in warm milk and water; boiled milk and stale bread for breakfast and supper; beef-tea, poached eggs, and light puddings for dinner; sitting room to be darkened—a green shade to be worn over the eyes.

20th.—Continues much the same; refused the medicines; screamed lustily on being put into the bath. Nurse thinks it brought on a fit. Bowels slightly moved; dejections very offensive, clay-coloured, slimy, hard and knotty, containing currants.—Currant cakes forbidden.

Tried to open the eyelids whilst the child was dozing, but I had scarcely touched the palpebræ when the child awoke, the *obicularis* contracted powerfully, copious lachrymation followed, and the child for some time after continued almost unmanageable.—*Ol. Ricini*, ʒij. statim. To have an enema of warm gruel and treacle. Body to be sponged with warm water every night.

R. Hyd. Chloridi, gr. iij.; *Sacchar. Albi*, gr. iv. sit pulv., to be dropped into the mouth, or given with a little treacle and bread at bed-time.

25th.—Bowels had acted more freely;

dejections still offensive, not so clayey; child extremely fretful; passed a wretched night; refused her breakfast; eyelids very much swollen and hot; eruption on the head and nates improving.

27th.—Going on well. Was again baffled in my endeavours to procure a sight of the eyes. The brother now exhibited symptoms of the measles, on which account I advised the removal of one of the children from the house. My request not being complied with, I felt very apprehensive about my little patient.

29th.—General health improving. Bowels act daily—not so offensive; appetite better; eruption fading away; no fresh pustules; intolerance of light still continues. Was enabled after some considerable resistance to catch a glimpse of the cornea of the right eye, which appeared slightly vascular. I had my doubts whether this condition of the membrane might not be due in some measure to the struggling of the child. In order that I might more effectually ascertain the real state of the cornea, I recommended to the parents the propriety of putting the child under the influence of the ether. This proposition was objected to. Left them to consider about it.

Feb. 5th.—For the last six days a marked improvement in the child's health was manifest. This morning she had a hard dry cough; countenance heavy and dull, premonitory of the approach of measles. The parents gave their consent to have the ether tried, and urged me to administer it. I declined, not deeming it advisable now that the child was threatened with measles, particularly as they had already lost one by that disease.—Repeat warm bath.

8th.—Rash coming out freely; cough very troublesome; eyelids very much tumefied.—To foment the face with decoction of poppy-heads and camomile flowers. $\mathcal{R}$ Mist. Amygdalæ, $\mathfrak{z}$ ss.; Potassæ Nitratæ, $\mathfrak{z}$ ss.; Syrupi Tolutani, $\mathfrak{z}$ iv.; Vin. Ipecac. $\mathfrak{z}$ ss. M. $\mathfrak{z}$ ij. ter die. Hyd. Chloridi, gr. iij.; Ant. Pot. Tart. gr. $\frac{1}{4}$; Sacchar. Albi, gr. iij. M. ut fiat pulv. h. s. s.

10th.—Going on favourably; intolerance of light continues very great.—Emp. Cantharidis (parv.) nuchæ capitis impond. Quinæ Disulphur. gr. ij.; Acid. Sulphur. dil. $\mathfrak{m}$ xii.; Magn.

Sulphat. $\mathfrak{z}$ ss.; Syrupi Aurantii, $\mathfrak{z}$ iv.; Infus. Calumbæ, $\mathfrak{z}$ iss. M. Cap. $\mathfrak{z}$ ij. ter in die.

20th.—Blistered surface looking very angry. Porrigo larvalis reappearing on the nates and upper lip. Bowels confined; nights restless; micturition frequent; urine of low specific gravity, and soon becoming ammoniacal—serous deposit by boiling.—Hyd. Cretæ, gr. iij.; Pulv. Rhei, gr. iv.; Pulv. Myristicæ, gr. j. M. Ut fiat pulv. h. s. s. $\mathfrak{z}$ iv. Pittville saline every morning. $\mathcal{R}$ Iodinæ Comp. $\mathfrak{z}$ ss. dosis $\mathfrak{m}$ x. quartâ quâque horâ ex aqua Cinnam. Chalk ointment to be applied to the blistered surface. Body and extremities to be sponged every morning with tepid water, containing Nitro-Hydrochloric Acid, $\mathfrak{z}$ ss. to 2 quarts of water.

22d.—Nurse complains that the child will not take the medicines. Thinks she has lost her sight. Seeing nothing in the condition of my little patient to contraindicate the use of the ether, I made up my mind to administer it. The child was wrapped in a blanket to prevent any struggling with the hands and feet, and then laid on its back on the table. To calm her fears, I first applied a warm sponge to her mouth, and after allowing her to breathe through it for a few seconds I removed it, and immediately replaced it with another of sufficient size to cover the mouth and nostrils. This was charged with about one drachm of pure sulphuric ether. At first she attempted to scream, but the ethereal vapour completely overpowered her in a few seconds, and in less than two minutes she was rendered quite insensible. During the process of inhalation, I kept the sponge in close apposition to the face, its porous structure not interfering with respiration.

On separating the eyelids I was delighted to find the cornea free from disease in both eyes. No phlyctenæ to be seen in either of the visual organs.

28th.—Finding that my little patient did not make that progress towards recovery which I could desire, I advised a removal to the sea-side as soon as the weather would permit, in hopes that the change would expedite the restoration of her vision. In the event of the case not turning out favourably, I recommended, as a precautionary

step, that the opinion of some eminent oculist in London should be taken on the case. Mr. Dalrymple was consulted, who coincided with my view as to the propriety of a removal to the sea-coast. The child was accordingly removed from Cheltenham about the latter end of June. I have since been informed that her general health has improved greatly, but her sight continues much the same.

REMARKS.—However valuable etherization may prove to the surgeon in deadening pain during an operation, its value to the practical physician is equally great. The gratification I experienced in being able, by its instrumentality, to assure myself of the safety of my little patient's sight, was an ample recompense to me for all the anxiety I had previously endured.

This, I believe, is the first case on record where ether has been given for the express purpose of obtaining a knowledge of the progress of disease. In this case it was especially useful as enabling me to form a correct prognosis of the probable termination of the disease, and to prescribe accordingly. Children under fourteen years of age are much more susceptible to the influence of ether than adults. They rarely, if ever, suffer from any of the inconveniences which those of a more mature age occasionally complain of. A very small quantity of ether will suffice to induce insensibility in them. In the adult I have constantly noticed increased vascularity of the tunica conjunctiva as a result from inhaling ether. This condition of the membrane has almost invariably been absent in all the experiments I have essayed upon children. This I conceive to be a strong recommendation for the more general adoption of etherization by ophthalmic surgeons in the various operations on the eye in young persons. In strumous ophthalmia its use is unquestionable and self-evident. It will not cure the disorder, nor relieve, except for a very short time, the intolerance of light, yet it will enable the medical attendant to ascertain effectually the state of the eye without exasperating the disease in his attempts to accomplish his object. All risk of permanent injury to the eye will be avoided should the cornea be ulcerated. The nitrate of silver, or any other

escharotic, can easily be applied, and recovery promoted, without inducing any of those paroxysms of crying and struggling which in many cases cannot fail to add materially to the mischief already existing. In very young children half a drachm of ether poured into a basin or jug containing a small portion of lukewarm water, and held under the child's face for a few seconds, a silk handkerchief or towel being thrown over her head to confine the vapour, will quickly and readily produce all the effects for which etherization may be required. Individuals with sensitive skins, and those suffering from sycosis, will find this method of inhaling the ether decidedly the best adapted for them. In such persons the application of the sponge to the mouth has a tendency to aggravate their complaint, and, when the skin is very tender, to blister the surface. The pressure occasioned by a mouth-piece is equally injurious, and produces similar unpleasant results, independent of its tendency to induce asphyxia.

Portland House, Cheltenham,
Oct. 6, 1847.

ON THE APPLICATION OF ETHER IN MIDWIFERY.

Dr. Roux, of Toulon, who has closely investigated the subject, has come to the following, among other conclusions, respecting the use of ether in midwifery.

1. No injury is done to females in the puerperal state by the respiration of ether vapour.
2. That in ordinary deliveries, ether vapour, by suppressing pain, does not interfere with labour.
3. That in difficult labours it is desirable, both for the mother and child, to prevent suffering.
4. The uterus and abdominal muscles continue to contract when the female is under the influence of ether.
5. The child does not appear to participate in the stupefaction produced by ether.
6. The various changes following delivery are not impeded or aggravated—thus the hæmorrhage is not increased, and the milk is equally secreted.—*Gaz. Med.* Oct. 9.

GUY'S HOSPITAL.

We are informed that Thomas Callaway, Esq. has resigned the office of Senior Assistant-Surgeon to Guy's Hospital, and that he has declined offering himself as a candidate for the office of Surgeon to the institution, rendered vacant by the lamented death of John Morgan, Esq.

MEDICAL GAZETTE.

FRIDAY, OCT. 15, 1847.

We do not know any subject better adapted for discussion at the medical societies, which are now about to meet in the metropolis, than the present state of our knowledge respecting the treatment of ASIATIC CHOLERA. Was the last visitation of this pestilence in 1831-2, in so far as a rational plan of treatment is concerned, entirely lost upon us? Did we, or did we not, gain any kind of knowledge by the loss in these islands of 42,000 lives from this terrible disease? and have we, with this pestilence almost upon our shores, still to seek for some method of treatment which may give only a moderate hope of success? These serious questions should be fully considered before the disease is in the midst of us; and, for the credit of the profession, we think no time should be lost in collecting the materials necessary for their solution.

From an excellent summary of the progress and history of the Asiatic cholera,* it appears that all kinds of treatment and all varieties of medicines have found advocates among different practitioners;—camphor, laudanum, ether, musk, magnesia, prussic acid, subnitrate of bismuth, calomel in large doses—blood-letting, general and local,—salt and water, warm or cold—mustard—brandy—warm baths—cold affusion—cold acidulous or iced fluids—hot saline solutions—charcoal—burned cork in milk—essential oils—nux vomica—sulphate of zinc, and other emetics—acetate of lead and alum! This long catalogue of suggested remedies, is surely sufficient to show that we are entirely at a loss for any

certain principle of treatment. Making due allowance for the symptoms of the disease in its various stages, for differences in the age and constitution of those attacked, and for the modifications produced by climate, it is impossible to admit that such a conflicting variety of medicinal agents can have been accumulated by a safe method of observation: and, should no other benefit be derived from a discussion of the subject, it will be some satisfaction if the ground be cleared for further exploration. There can be no doubt that many of the so-called remedies have been proposed only for the removal of certain symptoms, for the suppression of some, and for the restoration of other secretions: but they have left the essence of the disease untouched. We agree with Dr. Copland in thinking that by far too much importance has been attached to the use of calomel. Indian practitioners, it is well known, have a strong predilection for this medicine; and because bile is absent in the evacuations, they have had recourse to this medicine in large or very frequent doses. From this it might be supposed, that the chief source of mischief was the absence of bile; whereas this is probably only a symptom incidental to the general cause of disturbance. The saline treatment recommended by Dr. Stevens proved in most cases a complete failure; and, even where it was apparently successful, it is highly probable that recovery would have equally taken place without it. Dr. Stevens, finding that the saline and watery parts of the blood were carried off by the evacuations, proposed that this loss should be restored by the frequent administration of water holding chloride of sodium and carbonate of soda in solution. So far as theory went, this appeared like restoring the loss of materials to the system; but then no

* Copland's Dictionary of Practical Medicine, Part X. Art. *Pestilence Choleric*.

consideration was given to the depressed state of the vital powers, to the almost complete arrest of the function of absorption in the mucous membrane of the alimentary canal—the general relaxation of the capillary system, and the consequent serous exudation. A consideration of these obstacles to the passage of saline substances from the stomach and intestines into the circulation, led more than one physician to try the plan of injecting saline solutions into the blood-vessels. In this way it was supposed the saline matter would be directly restored to the blood: but the blood loses an enormous quantity of serum as well as salts, and no attempt was made, so far as we know, to supply a substitute for this loss. So little success, however, attended the injection-plan of treatment, that it was only resorted to when every other means had been tried and failed: and it added another cause of death, in the form of supervening phlebitis! Most observers agree that the injection of saline solutions into the blood was attended with a temporary alleviation of some of the symptoms: the profuse discharges from the bowels, however, did not disappear—on the contrary, they were often increased in violence and followed by a still greater depression of the vital powers—rapidly leading to dissolution.

We might proceed thus with other methods of treatment, and show that they have been too hastily taken up on preconceived theory; and that they tend rather to obscure the subject, than make the art of medicine of any practical use in preventing and subduing the attacks of this formidable disease. We do not object to theory on so difficult a subject, but what we have a right to call for, when a remedy is prominently thrust before us, is, not only a fair statement of the results of

treatment, but the stage of the disorder, the age and bodily condition of the person attacked, and whether other methods of treatment were or were not simultaneously employed. We do not want that kind of success in which a *pure* pathologist would rejoice, *i. e.* some improvement in the physical state of the internal organs brought to light by the microscope, and rendered apparent only after an inspection of the dead body, but *that* which will remove the symptoms and restore the patient to a healthy condition. During the prevalence of cholera in Paris in 1832, a practitioner of some eminence in his profession declared, at a meeting of medical men, in favour of the application of leeches to the abdomen as the most satisfactory method of treatment. It was objected by a member present that all the patients whom he had thus treated, had ultimately died. The advocate of depletion candidly admitted the truth of this statement, but at the same time contended that it was not from cholera, but from simple exhaustion, that his cases proved fatal: and he argued that the beneficial effects of topical blood-letting were clearly indicated, by the blanched state of the alimentary canal after death!

Men who base the treatment of disease upon mere theory, are generally unwilling to allow that free criticism of their views, which they are most ready to apportion to the plans pursued by others: but no true progress can be made in medical practice, unless every new method of treatment be submitted to the closest scrutiny. The proposer must not be offended at having his views doubted and examined as if he were overstating the value of his method, or as if he were ascribing to it effects which were probably really due to other circumstances that had escaped his notice. He must not feel that he is disgraced by finding his plan of

treatment unsupported by the facts which he adduces in its favour, or by its being proved to be altogether destitute of that novelty which he supposes it to possess. He may be well assured that if his observations have been correctly made, and his treatment be as useful as he believes it to be, no opposition can prevent it from being universally adopted; and the profession and public will not fail to award to him the merit of having made a useful and beneficial discovery.

One of the first duties of a Professional Congress, met to discuss the plans proposed for the treatment of Asiatic cholera, should be to pronounce an honest verdict of condemnation upon all those which cannot be supported by direct evidence of their efficacy. Medical statistics may here be of some service: the number of cases attended, the number of deaths, the period of the disease, both in reference to its first appearance in a population, and to its individual attacks, should be noted, and the results obtained by one practitioner balanced against those obtained by another who has employed the same treatment under similar circumstances. This would clear away error, and leave the field open for new trials. As the case stands at present, it is certain, if the cholera were to make its appearance among us, that many practitioners would proceed to adopt plans of treatment which the voice of such a Congress would at once condemn!

We believe it will be found that as yet medicine has not only done nothing for the treatment of Asiatic cholera, but that some plans pursued in 1831-2 are so injurious that the patient would have a better chance of escape if left to himself*. In the suddenness and

severity of the attack, and in the rapid progress of the symptoms to the complete prostration of the powers of life, there is probably no disease which approaches to it. All maladies have a ratio of mortality, and in a mixed population their attacks are confined to a certain number of persons. The number of cases and deaths in the Asiatic cholera is greater, even under treatment, than in any other disease affecting large sections of people; and there is in addition a most disproportionate rate of mortality at the first irruption of the disease, compared with that which is observed on its decline.

It is a fair presumption that during the prevalence of cholera in England and Wales in the years 1831-2, the greater number, if not all, the cases were submitted to medical treatment. Every exertion was made by Government and individuals to provide medical relief for all who were attacked: hospitals were thrown open in most parts of the country, and no means were spared which had a prospect of relieving the large amount of suffering that was then for the first time brought to the notice of the medical profession. Medical men exerted their ingenuity and skill to devise remedies for the disease; numerous experiments were tried, and we had before us the results of the experience of those who had seen the disease in India, and in the countries of Asia and Europe, which the scourge had slowly traversed before reaching our shores. It appears to us that whatever could be done by human aid was done in this country; and it may be therefore worth while to consider the rate of mortality of this disease where such efforts were made to combat its symptoms and progress. The Reports sent to the Privy Council Office are the only documents upon which an opinion can be based. It is probable that these are defective by not showing

* The homœopaths have boasted of their success in treating cholera; the secret of this is that they did not interfere so much as regular practitioners, and gave full play to the *vis medicatrix nature*!

fully the amount of mortality which attended the disease; for numerous deaths occurred from Asiatic cholera which were not returned as such: nevertheless they will serve to give some approximate idea of the mortality of Asiatic cholera under medical treatment. In England and Wales, including the metropolis, there were 61,051 cases, and of these 40,473 recovered, and 20,578 died.* Of the cases, therefore, no less than 33 per cent., or *one out of three*, proved fatal. When we look to the metropolis alone, where Cholera-hospitals abounded, the ratio of mortality was frightful! We are informed by these documents, and we believe the fact to be under-, rather than over-stated, that in London there were 11,018 cases, and of these 5745 recovered, and no less than 5273 died, —the deaths being nearly fifty per cent. of the cases, or *one half* of those who were attacked! Thus, the metropolis, with its numerous charitable institutions, and with the advantages of the best professional skill, was the seat of an amount of mortality only a little inferior to that of other localities, where the disease appears to have run its course unchecked!

"In Astrachan one-third of the cases were said to have been fatal:—among the Don Cossacks two-thirds. At Moscow the mortality varied greatly; being at first so high as nine-tenths of the cases, and afterwards sinking gradually to a third. * * * At the same period, when the rate of mortality did not rise above eight or ten per cent. in some parts, from one-fourth to two-thirds of the persons seized by it died in other places."

In Ireland the inhabitants were much in the same position as the Cossacks of the Don; for the returns

would lead to the belief that medical treatment had no effect whatever upon the progress of the malady. The number of cases up to March 1833, amounted to 54,552; and of these 33,381 recovered, and 21,171 died: i. e. with a smaller number of cases, the mortality was absolutely greater in Ireland than in all England and Wales, including the metropolis! We do not enter at present into the special causes of this increased mortality. The facts show in a fearful light that the medical art is almost powerless before this terrible disease.

In estimating the influence of treatment, and the relative utility of the various plans proposed, there is another circumstance connected with the mortality from cholera which appears hitherto to have been overlooked. It has been remarked that the ratio of deaths to cases is always at its maximum at the first appearance of the disease. These soon begin to diminish, and gradually decrease up to the decline of the malady. This will explain why those practitioners who appear late in the field, have always had such a large amount of success; and why a plan of treatment which has been (apparently) beneficial in the hands of one, has entirely failed in those of another. We do not know that we can illustrate this feature of the disease, better than by quoting a table, drawn up by Professor Casper, on the appearance of the cholera in Berlin, in 1831. This accurate observer has collected the cases and deaths for twelve successive weeks. The mortality was throughout excessively great, varying, in spite of treatment, from one-third to three-fourths of the cases; but the observations of the first few weeks will answer our purpose, by showing the sudden decline in the ratio of mortality after the first outbreak:—

* Copland, loco citato.

1831.	Cases.	Deaths.
26th Sept. to 2d Oct.	215	209
3d Oct. to 9th	279	153
10th to 16th	252	158
17th to 23d	269	155*

It will be perceived from this that, although the cases increased in number, the proportionate mortality became much less: and this appears to have been equally observed of the cholera both in Asia and Europe. All kinds of treatment will appear to fail at first, and to succeed after a few weeks! We must carefully, however, separate the effect of medicines from that natural mitigation of its virulence, to which the subtle poison of cholera appears liable.

We cannot at present carry this subject farther; but as it is of great national importance, and the attention of the profession is likely to be called to it practically, we think much good might be done if reports were drawn up by Committees of the various metropolitan medical societies, and published for the benefit of the profession. If it were found impossible to suggest at present any mode of treatment likely to be attended with success, the plan we recommend would at least have the effect of pointing out those methods of treating the disease, which may be regarded as not only unsuccessful, but positively injurious!

THE VERDICT OF THE JURY OF MATRONS.

It appears that the female convict on whose case we lately had occasion to comment, has been respited on the ground of her being pregnant. By order of the Secretary of State, she underwent a proper medical examination, and, contrary to the verdict of the jury of matrons, she was pronounced to be in the fifth month of pregnancy! This mistake, in addition to others made of late years, is surely sufficient to justify the entire abolition of an institution based in ignorance, and which had its origin in a barbarous age.

* Denkwürdigkeiten zur Medicinischen Statistik, von Dr. J. L. Casper. Berlin, 1846.

Rebistes.

The Human Brain: its Structure, Physiology, and Diseases. With a Description of the Typical Forms of Brain in the Animal Kingdom. By SAMUEL SOLLY, F.R.S., Senior Assistant-Surgeon to St. Thomas's Hospital, and Lecturer on Clinical Surgery, &c. &c. Second Edition. With numerous Wood-engravings. 8vo. pp. 688. London: Longman & Co. 1847.

Few anatomical works that have appeared of late years have received a higher or more deserved approval from the profession than was obtained by the first edition of Mr. Solly's Treatise on the Human Brain, published in the year 1836. It was at once admitted to contain a more ample and a clearer description of the fibrous structure of this complicated organ, and a more accurate description of the connections of its nerves, than had appeared in any preceding work on the subject. This reputation the first edition of the treatise has maintained up to the present time; but the recent observation, by numerous anatomists, of a considerable number of important facts especially relative to the microscopical characters of the cerebral tissues, rendered it necessary that many additions should be made to the original work, to bring it up to the standard of our present knowledge. These additions have been most amply supplied in the volume before us, which, together with all that gave interest and value to the former edition, is now made to comprehend, we will venture to say, as nearly as possible the whole of the information of importance already established with regard to the anatomy, physiology, and diseases of the brain. We have felt great satisfaction in again accompanying Mr. Solly in his lucid description of the exquisite structural arrangements of this wonderful organ; and we can unhesitatingly say that the student will find comprehended in the first ten chapters of Mr. Solly's treatise a series of the most comprehensive and interesting anatomical details in the English language. We shall, however, chiefly confine our remarks to the eleventh and concluding part of the treatise (which, by the by, rather

exceeds in quantity of letter-press the whole of the other ten taken together), containing what the author modestly terms an "outline of the diseases of the brain," but which we do not hesitate to characterise as a very excellent and practical description of this important and obscure class of maladies. The author has evidently been a most careful observer of cerebral diseases: he observes, that the interest he has felt from the time he first heard Spurzheim (to whose phrenological doctrines he is evidently a decided convert) demonstrate the brain in 1826, has induced him to attend to the pathology of this subject more than perhaps he should otherwise have done. In his description of these maladies, Mr. Solly arranges them in the following order:—1. Anæmic Affections; 2. Hyperæmic; 3. Convulsive; 4. Organic. The diseases arranged under each of these heads are fully described and illustrated chiefly from the author's own observation in hospital and private practice, and also with a very candid reference to the researches and opinions of others. To enter upon an analysis of the innumerable details contained in this portion of the work is entirely beyond the object of the present notice; but we trust that the following extracts will prove of sufficient interest to induce most of our readers to devote the spare hours of their next leisure-week to a careful perusal of the entire second portion of Mr. Solly's treatise.

"Laceration and softening of the brain dependent upon the growth of osseous spicula from the internal table of the skull.—The extreme thickness of the skull which is not unfrequently met with in insane patients, must be regarded as the result of long-continued and general hyperæmia of the dura mater. The spicula of bone which are found sometimes shooting from the internal surface of the skull, though scarcely coming into this category, deserve mention here. These are generally an abnormal development of normal projections: we meet with them not unfrequently springing from the temporal and parietal bones in the temporo-sphenoidal fossa. I have seen them in cases where they have evidently lacerated the brain after a severe blow has been struck on the skull. The brain in such cases is shaken violently, and moved within the skull, so that the sharp projecting spiculum is jerked out of the fossa in the brain, in which it lies quietly at

rest, and lacerates the brain on the side. The following case illustrates this, and also organic disease. The anterior and posterior clinoid processes are not unfrequently so abnormally developed that they act as irritating extraneous bodies. They have frequently been considered as the proximate cause of epilepsy, and they have certainly often been found diseased in this formidable complaint. I had the opportunity of making a post-mortem examination in the following case, through the kindness of my friend, Mr. Ebenezer Smith, of Billiter Square:—

"E. W., aged 32, suffered from epilepsy since she was 12 years of age. The first attack followed a blow on the back part of the head, occasioned by a fall. Latterly the fits occurred very frequently, four or five times in the night, with an occasional interval of four or five days. Her temper was excessively irritable, and her mind had gradually become imbecile. She died during the fit, apparently in a state of asphyxia.

"Post-mortem.—Sub-fascial tissue of the cranium abnormally vascular and firm; bones of the skull vascular, compact, and thick, particularly at the centres of ossification in the frontal and parietal bones. The frontal bone in the mesial line thin; vessels of the dura mater enormously distended: bled very freely on separating it from calvarium. Arachnoid slightly opaque; vessels of pia mater very full of blood. Fossæ digitatæ between the convolutions in the parietal and frontal regions large; cerebro-spinal fluid abundant. Cortical substance of the cerebellum rather darker than usual; the medullary more vascular; the whole rather soft. On making a section of the centrum ovale, we were struck with the distinctness of the line of demarcation between the cortical and medullary substance, both of which were very vascular; softening of the fornix. Choroid plexus large, and almost fleshy. In the right temporal sphenoidal fissure we found an abnormally-developed mammillary process, about the sixth of an inch in length, sharp at its point, but wide and broad at its base, projecting like a spine from the squamous portion of the temporal bone; and on the middle lobe of the brain, corresponding to this projection, there was distinct softening of the cortical substance. No other cavity examined." (pp. 427-8).

We cannot perceive that the above case at all illustrates the fact that laceration of the brain is liable to be produced by these projecting spicula from the interior of the cranium. It could scarcely, we apprehend, be argued that the patient suffered from laceration of the brain in consequence of the blow sustained twenty years

previously to her death, and that the injured portion of the middle lobe remained in a state of softening during the whole of the intervening period.

"Diagnosis of inflammation of the lining membrane of the ventricles.—The lining membrane of the ventricles is sometimes inflamed without the arachnoid on the surface being affected. Andral remarked that diseases of the former are not necessarily connected with diseases of the pia mater surrounding the brain, either at its base or convexity. When the lining membrane of the ventricles is inflamed, without the hemispherical ganglion having been previously attacked, as is usually the case, the symptoms are peculiar; for the arachnoid and pia mater of the surface is most frequently attacked in the first instance, and that of the ventricles subsequently. The diagnosis might perhaps be considered more interesting in a physiological, than useful in a practical, point of view. But such is not the case; for this form of inflammation is so insidious, and its formidable character so liable to be passed over until it is too late to apply our remedies, that we cannot be too much alive to the symptoms which indicate his presence. The following case illustrates this. When I related it to a medical society, some very sound and careful practitioners remarked on its close resemblance to many cases of hysteria which were occurring daily in their practice.

"In the summer of 1844, at 2 P.M., I visited in consultation a young lady, æt. 15, suffering in the following manner:—I found her lying on a sofa, her countenance much flushed, her head hot, pulse irregular and quick, but without much power; strabismus of the right eye towards the nose; both eyes bright, and rather staring. She was not able to answer any questions, but sufficiently conscious to open her mouth slightly and partially protrude her tongue, the tip of which was brown and dry; her right arm was raised in the air, and jerked about spasmodically; afterwards she picked the bed-clothes, but she was unable to move the limbs on the left side at all. The gentleman in attendance informed me that he had seen her occasionally for some time past with various symptoms: at one time with a cough, very similar to whooping-cough; and on more than one occasion suffering from severe affection of the respiratory organs, and the next quite well. She was also subject to many hysterical symptoms. She first menstruated one year back; but she has since been irregular, three months having elapsed without any show.

"For the present illness Mr. F. visited her six days ago. He found her with an exceedingly quick, small pulse, without

anything apparently to account for it; there was a general dulness of expression; eyes looking heavy, pupils dilated; intellect rather blunted; giving perfectly correct answers, only very slowly. She complained of pain in the left side of the abdomen, and slight pain in the head. He ordered her saline aperients, and hyoscyamus in very small doses. Mr. F. informs me that no very decided change took place in her symptoms till the fourth day, when she was much worse. She complained of cold chills; and soon after, the parents observed that the limbs on the left side lay like withered limbs, and those on the right side were seized with convulsive movements. She was still sufficiently sensible to complain of the jerking of her limbs, which she said were mad. Her intellect became gradually more dull, but she was not delirious. I told Mr. F. that I considered that there was inflammation of the lining membrane of the ventricles, with effusion, and I was afraid that there was some softening about the thalamus, more especially on the left side. She died about eight hours after I saw her.

"*Post-mortem*, 84 hours.—*Body* plump, slightly green over the abdomen, but otherwise fresh.

"*Head*.—Convolutions of the upper part of the brain flattened; no inflammation of the arachnoid in this situation, or sub-arachnoid effusion; slight softening of the great transverse commissure; ventricles filled and distended with bloody serum mixed with some pus. The lining membrane of the right ventricle slightly inflamed, studded over with ecchymosed spots; sero-sanguineous effusion into the left ventricle; suppuration, with softening of the right thalamus; some softening of the left; some effusion at the base round the medulla oblongata. *Abdomen*: hydatid" (serous cyst?) "attached to each broad ligament of the uterus." (pp. 465-6).

"*Recapitulation of treatment in inflammatory cerebral diseases generally.*—In the treatment of all inflammatory affections of the brain, the following broad principles must always be attended to:—

"1st. There is no time to be lost—even minutes are of value.

"2dly. That inflammation of the brain is a depressing disease, and that, as a general rule, general blood-letting is not often admissible.

"3dly. That, though general blood-letting may sometimes be attended with benefit at the time, the good derived from it is seldom permanent.

"4thly. That local blood-letting, by leeches and cupping, is generally useful, and especially in cases of insomnia, arising from abnormal action of the brain.

"5thly. In cases of insanity, where opium

has failed to produce sleep, leeches and cold applications frequently will; and, if they do, it is strong evidence that the excitement arises from hyperæmia, and not from anæmia, as in that of *delirium tremens*.

"6thly. That *aconite* and *digitalis* are the best sedatives, especially when combined with mercury.

"7thly. When it is necessary to salivate rapidly, raise the cuticle by boiling water, or a similar escharotic, and dress the surface with the strong mercurial ointment.

"8thly. Always commence the treatment with a brisk mercurial purgative.

"9thly. Soothe the patient's feelings in every way.

"10thly. Never leave anything that is disagreeable to the patient to be done by a nurse or attendant, such as the application of leeches, &c.; but *persuade* him to have them applied.

"11thly. Never lose your patience in the treatment of a chronic case, or try to hasten the cure by increasing the doses.

"12thly. When it is considered necessary to continue the use of mercury for a lengthened period, combine tonics with it." (pp. 487-8).

In the present edition a great improvement has been made in introducing the engravings with the letter-press: in the former edition the necessity of continually referring to the plates at the end of the work rendered its perusal extremely inconvenient.

This work is one which fully deserves, and will certainly obtain, a place among our medical classics. The subjects of which it treats, like almost all questions in anatomy and pathology, will doubtless, as science advances, receive numerous additions and modifications; but the scope of the treatise is so ample, and the arrangement of its various topics so judicious, that we believe it need never be superseded as a standard work of reference.

On Wounds and Injuries of the Abdomen and the Pelvis; being the second part of the Lectures on some of the more important Points in Surgery. By G. J. GUTHRIE, F.R.S. Cr. 8vo. pp. 73. Churchill, London, 1847.

No person can be more fitted to impart an extended and accurate knowledge of the symptoms, results, and treatment of wounds of particular organs of the human body, than is the

acute and experienced army-surgeon who has recently published this valuable work. The accidents which are of most frequent occurrence in civil life—such as heavy falls, in which every portion of the body is implicated in the shock, the blows of ponderous instruments, and the extensive application of crushing force—such as that produced by carriage-wheels and falling weights, are so calculated to produce at once extensive lesions of several important or vital organs, that the surgeon in attendance upon a civil hospital, however large, has, comparatively speaking, rarely an opportunity of being able to distinguish with certainty, previous to death, the precise nature and extent of the internal lesions from which patients thus injured suffer. On the contrary, the direct course usually taken by musket-bullets, and by cut-and-thrust weapons, frequently enables the military surgeon to determine with the greatest nicety the precise organ that has sustained lesion, and subsequently to observe the exact nature of the symptoms that indicate a wound of that particular viscus.

Mr. Guthrie's well-known experience, obtained in several of the most hard-fought and sanguinary actions of the late peninsular war, has enabled him to treat this subject in a most satisfactory and practical manner. The volume before us consists of six lectures, in which, by a series of cases, (a large proportion of which occurred under the author's own observation,) every description of wound and injury to the abdomen and pelvis, is practically illustrated. As nearly every observation contained in this volume is given as a direct inference from the cases which precede it, we should scarcely fairly illustrate the value of the work by quoting detached passages from the lectures themselves: the following "general conclusions," with which the author sums up his highly interesting details, will, however, fully satisfy our readers of the importance of the inquiry, and of the practical spirit in which it has been carried out by the author.

"1. Severe blows on the abdomen give rise to the absorption of the muscular structures, and the formation in many instances of ventral hernia; which may in some measure be prevented during the treatment,

by quietude, by the local abstraction of blood, and by the early use of retaining bandages.

"2. Abscesses in the muscular wall of the abdomen, from whatever cause they arise, should be opened early; for, although the peritoneum is essentially strong by its outer surface, it is but a thin membrane, and should be aided surgically as much as possible.

"3. Severe blows, attended by general concussion, frequently give rise to rupture of the solid viscera, such as the liver and spleen, causing death by hæmorrhage. When the hollow viscera are ruptured, such as the intestines or the bladder, death ensues from inflammation.

"4. Incised wounds of the wall of the abdomen of any extent rarely unite so perfectly (except, perhaps, in the linea alba) as not to give rise to ventral protrusions of a greater or less extent."

"5. As the muscular parts rarely unite in the first instance after being divided, sutures should never be introduced into these structures.

"6. Muscular parts are to be brought into apposition, and so retained principally by position, aided by a continuous suture through the integuments only, together with long strips of adhesive plaster, moderate compression, and sometimes a retaining bandage.

"7. Sutures should never be inserted through the whole wall of the abdomen, and their use in muscular parts under any circumstances is forbidden; unless the wound, from its very great extent, cannot be otherwise sufficiently approximated to restrain the protrusion of the contents of the cavity, the occurrence of which case may be doubted.

"8. Purgatives should be eschewed in the early part of the treatment of penetrating wounds of the abdomen. Enemata are to be preferred.

"9. The omentum, when protruded, is to be returned, by enlarging the wound through its aponeurotic parts, if necessary, but not through the peritoneum, in preference to allowing it to remain protruded, or to be cut off.

"10. A punctured intestine requires no immediate treatment. An intestine, when incised to an extent exceeding the third part of an inch, should be sewn up by the con-

tinuous suture in the manner recommended at pages 26 and 27.

"11. The position of the patient should be inclined towards the wounded side, to allow of the omentum or intestine being closely applied to the cut edges of the peritoneum. Absolute rest, without the slightest motion, should be observed. Food and drink should be restricted, when not entirely forbidden.

"12. If the belly swells, and the propriety of allowing extravasated or effused matters to be evacuated seems to be manifest, the continuous suture or stitches should be cut across to a certain extent, for the purpose of giving this relief.

"13. If the punctured or incised wound is small, and the extravasation or effusion within the cavity seems to be great, the wound should be carefully enlarged, and the offending matter evacuated.

"14. A wound should not be closed until it has ceased to bleed, or until the bleeding vessel has been secured, if it be possible to do it. When it is not possible so to do, the wound should be closed, and the result awaited.

"15. A gun-shot wound penetrating the cavity can never unite, and must suppurate. If a wounded intestine can be seen or felt, its torn edges may be cut off, and the clean surfaces united by suture. If the wound can neither be seen or felt, it will be sufficient for the moment to provide for the free discharge of any extravasated or effused matters which may require removal.

"16. A dilatation or enlargement of a wound in the abdomen should never take place unless in connection with something within the cavity rendering it necessary.

"17. When balls lodge in the bones of the pelvis, they should be carefully sought for and removed, if it can be done with propriety and safety.

"18. In a wound of the bladder, an elastic gum catheter should be kept in it" [the bladder] "until the wound is presumed to be healed, unless its presence should prove injurious from excess of irritation, not removed by allowing the urine to pass through it by drops as it is brought into the bladder.

"19. In all cases in which a catheter cannot be introduced, in consequence of the back part of the urethra or the neck of the bladder being injured, an opening for the discharge of the urine should be made in the perineum.

"20. The treatment of all these injuries must be eminently antiphlogistic, principally depending on general and local blood-letting, absolute rest, the greatest possible abstinence from food, and, in some cases, from drink, the frequent administration of enemata, and the early exhibition of mercury

* The author remarks that the observations he had made on this subject during the war were confirmed by those cases in which he has tied the common iliac or external iliac artery, by an incision on the face of the lateral part of the abdomen, the patients recovering afterwards; the incision through the muscular wall did not remain united, although union appeared to have taken place in the first instance, and a hernial protrusion formed in all, in the course of the greater part of the line of the wound.

and opium in the different ways usually recommended with reference to the part injured."

Hydropathy and Homœopathy impartially Appreciated, with an Appendix of Notes illustrative of the Influence of the Mind on the Body. By EDWIN LEE, Esq. &c. The Third Editions combined. 8vo. pp. 139. Churchill: London. 1847.

THE essays contained in this volume have been for some time before the profession, and have been recognised as sensible and moderate expositions of the slender merits which attach to the popular charlatanism of hydropathy and homœopathy, and as clear exposures of the gross absurdity, inhumanity, and fraud of those who have upheld these practices as the universal remedies for the whole of the diseases to which the human frame is liable. We recommend a perusal of Mr. Lee's judicious remarks to those who still retain a lingering faith in the absolute efficacy of the billionth dilutions of the Hahnemannists, and in the still more absolute dilutions of the medical board-house keepers of the Rhine.

Proceedings of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, Sept. 27, 1847.

MR. DENDY, President.

THIS was the first meeting of the session. The President made some introductory observations.

The Prevalent Fever.

DR. CLUTTERBUCK remarked, in allusion to the prevalence of fever at present, that medical men were in the habit of expecting more benefit from their art than they had any right to calculate upon. In the present fever, which was the ordinary low fever, or typhus, the passive mode of treatment was the best, active remedies being of little use at the stage of the disorder in which the patient was usually seen. In idiopathic fever, Dr. Clutterbuck considered the brain to be the seat of the disease. He was inclined to agree with some French authors, who thought all diseases organic: functional disease was an absurd term, as there could not be a disordered function without dis-

order of the organ performing it—there could not be an effect without a cause. In typhoid fever the brain was the organ primarily and essentially affected. This state of the brain was, he believed, inflammatory; the febrile symptoms, the hot skin, furred tongue, and accelerated and disordered circulation, were the effects of the local affection, and would seem to indicate the use of bloodletting and other depleting remedies; but this did not necessarily follow. The peculiarity of the organ affected influenced the treatment. In inflammation of the heart, for instance, there was often a feeble pulse, the heart not being able to admit the usual quantity of blood. This state modified the treatment; you could not treat it as you would a pleurisy, yet they were both caused by inflammation. Feebleness of pulse did not, however, always indicate debility of system. As the fever went on, the system was changed physically as well as vitally; large bloodlettings could not check the disease; the organs must slowly improve as they became slowly affected. Moderate depleting measures might sometimes be necessary, when we saw the patient at an early period. Although the pulse was weak, and the muscular power depressed, stimulants were not proper; they did harm. The disease was not founded on debility, it depended on increased action. The patient's feelings were an excellent guide to the treatment, and we should give drink and food as they were required. We must attend to cleanliness, and have a constant supply of pure air night and day. There was a tendency in inflammation to subside spontaneously, and the passive treatment, or what the French called *medecine expectante*, answered best. A disease which had gone on for a week could not be cured in a day; we must expect it to take quite as long to subside.

THE PRESIDENT remarked, that Dr. Clutterbuck's observations were negative; the first stage seemed to him (Mr. Dendy) the most important.

DR. T. THOMPSON said, that contrary to Dr. Clutterbuck's experience, he had rather gained confidence in treatment in these cases, than lost it. Though fever was indisposed to yield to treatment, yet it might be much moderated by proper remedies. The mild mercurial treatment seemed to him the best in the present typhus, as well as when it was associated with bronchitis or diarrhoea. A profuse secretion of bile often seemed to precede the cure, and this was assisted by mild mercurials. He gave the mercury with chalk three times a day, combining it with Dover's powder when diarrhoea was present. Dr. Thompson differed from Dr. Clutterbuck as to all diseases having a local origin; on the contrary, he

thought almost every disease depended on the general state of the system. He could not think of any disease strictly local, except a mechanical injury; for instance, a scrofulous enlargement of a gland in the neck depended on the strumous state of the system.

Dr. Clutterbuck replied, that Dr. Thompson confounded the predisposition to disease with the disease itself. Previous to the swelling of the gland the patient often enjoyed the best health, with no sign of disease; on exposure to cold the gland swelled. This he (Dr. Clutterbuck) called the disease which is modified by the constitution. Of the predisposition we knew nothing, except by the effects.

Dr. WILLSHIRE said, a scrofulous gland indicated the scrofulous diathesis; a cancerous mamma, the cancerous diathesis; yet, at the same time, pleurisy, pneumonia, hepatitis, &c., were local affections. The constitution of the fever must be defined before we could understand the treatment. In some cases, stimulants administered early cut short the disease; in others, mild remedies were the best. In the remittents of children, complicated with affections of the large intestines, and in other fevers, the chlorate of potassa was a valuable remedy.

Mr. BISHOP thought that the distinction between organic and functional disease was quite made out: in the former, the structure was diseased; in the latter, the functions only were disordered.

Dr. T. Thompson said, if Dr. Clutterbuck belonged to the organic school, his last remarks were inconsistent with it. Dr. Clutterbuck had said he confused the predisposition with the disease; but if a predisposition to a disease existed, it must depend upon some change independent of the local affection.

Dr. CROWN believed that there were many local and many general diseases. He was sorry to hear Dr. Clutterbuck disarrange our treatment of fever cases. He thought, in almost every case, we might administer treatment which would be of service.

Dr. Clutterbuck reiterated his former opinions.

MEETINGS OF SOCIETIES APPOINTED FOR THE ENSUING WEEK.

Westminster Medical	Sat. 16th, 8 P.M.
Harveian	" "
Guy's Physical	" "
Pathological	Mon. 18th, "
London Medical	" "
Hunterian	Wed. 20th, "
South London Medical	Thurs. 21st, "

* * The Secretaries of the various scientific societies of London are requested to favour us with lists of the evenings appointed for their meetings during the ensuing session.

Correspondence.

PRESCRIBING IN NEWSPAPERS.

SIR,—Can we be surprised at the number of deaths which daily occur in children, when we see such paragraphs as the following, in a paper largely circulated amongst the poor?—

"*Cure for dysentery.*—Half a noggin of logwood, well boiled and strained, half a glass of port wine, and twenty drops of laudanum, have proved successful in checking dysentery in adults. For children, only fifteen drops of laudanum should be used."—*Sunday Times*, 3d October.

Such a prescription (!) will not bear any remarks, but I think it is important to know, whether in the event of an accident from the use of it, the editor of the paper could not be punished—doubtless he is morally guilty of a great crime in permitting its insertion.—I am, Sir, your obedient servant,

M.D.

4th October, 1847.

* * We very often see published, in respectable newspapers, "sovereign remedies," which, if strictly followed, would infallibly cause the death of those who swallowed them! Any amount of ignorance will suffice for conducting the *medical* department of a newspaper. It is a positive disgrace to some of our leading journals, that, before giving circulation to paragraphs on medical subjects, the editors do not cause them to be revised by men who understand the subject. The editors cannot, however, be made legally responsible in the way our correspondent supposes: every reader of a paper is supposed to have enough brains to protect himself; and if he is foolish enough to follow the quasi-medical advice published in the journal, any mischief which follows is considered to be a proper punishment for his folly.

Medical Intelligence.

THE ASIATIC CHOLERA.

THE Constantinople Journal of the 26th ult. states that between the 9th of September, the day of the appearance of the cholera at Trebizonde, until the 15th, the malady continued to increase; but from the 15th to the 18th, the date of the last accounts from that town, the attacks were less numerous, and the symptoms less alarming. There had been 300 cases, of which 103 proved fatal. The Government medical officer at Trebi-

sonde has remarked that the disease is not so violent as that which formerly desolated Europe, and he adds that of those who applied to him in time for advice he saved 90 out of 100. Some cases had been reported in the villages in the neighbourhood of Trebisonde. The *Stambol*, which brought the foregoing news to Constantinople, left Trebisonde with 256 passengers, of which three fell ill almost immediately of cholera, and two of them died on the passage; the third was in a dangerous state when the *Stambol* arrived at Constantinople. Under these circumstances, the small lazaretto of Cavak not being prepared for the admission of travellers, the *Stambol* was sent to the Dardanelles to perform a quarantine of ten days. This vessel had been supplied with chloride of lime, oil, and other medicines suitable to her position. At the date of the 4th inst. the cholera had nearly ceased at Kars, and in the city of Erzeroum. To these details are to be added the following facts communicated in a letter from a correspondent of the *Journal de Constantinople*, dated Bagdad, Sept. 1:—"The cholera, which last year made such ravages at Bagdad, has again appeared, and of 16 who have been attacked 6 have died. The cholera has prevailed for the last 20 days at Imaur-Ali, and a soldier lately arrived thence died yesterday in the hospital. MM. Droz and Esmur-Effendi, the physicians sent by the Sultan to study the malady, visit all the invalids, and give proofs of much zeal and devotedness. To the present moment, as may be seen, the number of attacks is inconsiderable, but it is to be feared that the disease will follow its ordinary progress. It has cut off a number of persons at Meched, and at Hilla, but its intensity has diminished in the latter town during the last two or three days." With respect to the disease in Europe, it is announced in the *Augsburg Gazette*, that the cholera was approaching Moscow with rapid strides. It is even said that some cases had appeared in that city. A family belonging to the higher classes, which was proceeding from Saratoff to Moscow, lost two servants during the journey, and on their arrival at Moscow a child and its nurse died. Colonel Stalupin, an aide-de-camp of the Emperor, who was at his estate near Saratoff, had fallen a victim to the scourge. The cholera had likewise appeared at Odessa. The *Gazette Médicale* (Oct. 9th) informs its readers that the cholera has passed the frontiers of Galicia, and is now spreading through Silesia and Moldavia.

DESTRUCTION OF THE POISON OF CHOLERA BY CHLORINE.

MR. HERAPATH of Bristol has addressed a letter to the *Times*, in which he states that from a series of experiments made at the

last visitation of the cholera, he had ascertained that the poison which generated the disease was destroyed by chlorine, or a heat of 300°. We quote the following extract from his letter.

"The only chemical preventive I depended upon in my numerous exposures to the virus was *chlorine gas*, and this I believe to be a perfect one if the fumigation is complete. I invariably passed through an atmosphere of it on my return home, and kept it escaping in my residence during the continuance of the disease in the city. I also placed large quantities of the substance necessary for the evolution of this gas in the hands of a Bristol druggist, who was kind enough to distribute 1,200 quantities of it gratuitously to applicants during three days with instructions for the use, and am happy to say that during that time the deaths fell from ten to one per day, and I have but little doubt that if every ship arriving in England from an infected place, should be exposed to a perfect fumigation with chlorine, we shall be preserved from the infection. If the disease should pass this cordon, by any accident, then every house in the infected district should be simultaneously fumigated with it—say three times a day; unless done in all houses at the same time, it would be useless, or nearly so; and to do it effectually, a mixture of three parts of common salt and one of black oxide of manganese should be placed just inside the outer or street door of the dwelling house, and a little common vitriol poured upon it. The inward current of air will convey the chlorine gas to every part of the interior, and wherever it can be smelt the effect is produced—the miasm is destroyed. If articles of clothing are infected, and the colours likely to be injured by the gas, they may be heated in an oven or on a kiln, to 250 or 300 degrees (about the heat of baking bread), when they might be handled or used with perfect impunity."

VACCINATIONS IN FRANCE IN 1844.

FROM the last reports on Vaccination in France during the year 1844, it appears that there were—

Of births . . .	924,000
Of vaccinations . . .	582,000
Attacked with small-pox . . .	8,812
Disfigured by " . . .	1,139
Deaths from " . . .	1,176

The total expense of the vaccinations was about £8,700.

OBITUARY.

DR. BELL.

WE regret to announce the death of Dr. Bell, who had distinguished himself for his medical services in Persia. He had ob-

tained leave of absence for the benefit of his health, and was on his return to England, when he was seized with fever at Erzeroum, where he died.

DR. HARDWICK.

On Friday, the 8th inst., at Lower Phillimore Place, Kensington, Alfred Hardwick, Esq. M.D., aged 59.

Selections from Journals.

SURGERY.

GUN-SHOT WOUND OF THE HEART, WITHOUT PERFORATION OF THE PERICARDIUM. BY A. F. HOLMES, M.D. PROFESSOR OF MEDICINE, MONTREAL.

IN December 1844, during the municipal elections, a riot took place, in the course of which an attempt was made by some of the parties engaged to force their way into a house occupied by their opponents. A young man of the name of Johnston, being the foremost of the assailants, was, while attempting to force his way up a stair-case, fired at, and mortally wounded. He lived but a very short time. I was called to see him, and subsequently I made an examination of the body. Externally, several wounds were visible (the musket having been probably loaded with buck-shot,) on the left side of the chest. Only one had penetrated its cavity. The shot had entered at the upper edge of the fourth rib just at its union with its cartilage, carrying off the edge of the bone. With the view of obtaining a better sight, the left ribs were sawed low down, and then the sternum carefully raised. The appearances presented were a bloody ecchymosed condition of the anterior part of the left lung as it laps over the pericardium; and an ecchymosis of the extent of about one inch and a half, filling the anterior edge of the right lung, where it lies in contact with the pericardium. The pericardium evidently contained a large quantity of fluid, the nature of which was denoted by the colour of the membrane.

Feeling convinced of the perforation of the pericardium, I carefully cleared it of the adhering ecchymosed cellular substance—a proceeding which I afterwards regretted, as it prevented our tracing what must have been the track of the ball. We then examined the left lung, and found that it had been struck near its anterior edge, and the pleura covering it torn, showing a circular aperture, as if the ball had penetrated the lung: no corresponding aperture for exit could be found, and a probe could be passed but a very short way into the substance of the lung. Nearly a pint of bloody serum, but without clots, occupied the cavity of the pleura. The

pericardium was then examined with the greatest care, every part showing the least appearance indicative of the passage of the ball being closely investigated. The sac evidently containing a large quantity of blood, it never occurred to us that the heart could have been wounded unless after the perforation of its envelope. Finally, supposing that the ball might have entered so as to produce a kind of valvular opening, I surrounded the pericardium with my hands, and squeezed it with considerable force. No fluid issued, and then despairing of discovering the supposed perforation, I slit open the membrane, and gave exit to a large quantity of bloody serum and clots of blood. There was seen, on the anterior wall of the heart, penetrating the right ventricle, a transverse linear opening without laceration at the margins, which were smooth and rather turned inwards, and sufficiently large to admit the finger. Feeling sure of now finding the ball, the finger was introduced. The septum ventriculorum was found uninjured, but no ball could be perceived. The engorged portion of the right lung was then examined, and it was found that, immediately within its edge, on the mesial aspect, a hole existed in the pleura, which did not, however, penetrate into the substance of the lung. Finally, the lungs and heart were removed from the body, and there was found lying in the right cavity of the pleura, a piece of lead of an irregular figure, about the size of a buck shot. Though unable to point out the track of the ball, yet the injury of the left lung, the bloody state of the cellular substance over the pericardium, the ecchymosis and wound of the right lung, the direction of the wound in the heart, and the discovery of the ball in the right cavity, can leave no doubt as to its cavity; but the wonder is how the heart could have been perforated while the pericardium was not. A question may be raised as to the possibility of the opening being caused by the spontaneous rupture of the heart, and not by the direct force of the ball; and in this view the case may present a subject of interest to the medical jurist. To support this opinion, but two circumstances can, I think, be adduced:—1st, That the person was making strong exertion: and 2nd, That the pericardium was whole. The force of the former of these facts, however, is entirely removed, when we find that the opening had taken place under different circumstances from those in which spontaneous rupture occurs: 1st, The person was not known to have laboured under heart-disease, and the manner of his death makes it certain that he was in good health at the time; 2nd, The heart was natural in size and consistence, perhaps below the average bulk; 3rd, The aperture was in the right ventricle and towards the

base, while in the very large majority of cases recorded of spontaneous rupture, the opening has been in the left ventricle, and towards the apex. 4th, The margins of the wound were not softened or ragged, but smooth, linear, and slightly turned in. 5th, The wound was longer on the peripheral than on the ventricular aspect.

With regard to the second ground for supposing the injury of the heart to have been caused by spontaneous rupture, viz. the integrity of the pericardium, I may remark that however unlikely it might be that the pericardium should be found uninjured while the heart within it had been perforated, yet the possibility of such an occurrence is demonstrable from the analogy furnished by gun-shot wounds in other parts of the body. Military surgeons have frequently narrated examples where balls had penetrated to a considerable depth, carrying before them folds of the shirt, handkerchiefs, &c., without perforating them. Thus, Guthrie states the case of an officer who was wounded in the thigh. "I saw," he says, "that the shirt had gone in with the ball, and, on pulling at the shirt it came out from the depth of four inches, a perfect cul de sac having the ball at the bottom of it." Hennen, Larrey, &c., relate similar examples. Now, if a shirt or a silk handkerchief can be thus acted on, there can be no reason why a tough strong membrane like the pericardium should not be similarly affected. Indeed, such an occurrence is actually on record. In the article "Cas Rares," in the *Dict. des Sci. Méd.*, we have the following narration: "Un soldat ayant reçu un coup de feu à la poitrine, fut relevé presque mort: un hémorrhagie abondante faisait désespérer de sa vie. A force de soins, le sang commença à couler avec moins de force vers le troisième jour: insensiblement les forces du malade revinrent, la suppuration succéda à l'hémorrhagie: il sortit plusieurs esquilles d'une côté que la balle avoit fracturée. Au bout de trois mois, la plaie se cicatrisa, et le malade, rétabli, n'éprouvait d'autre incommodité que de fréquentes palpitations de cœur qui le tourmentèrent pendant trois ans. Il mourut d'une maladie étrangère aux palpitations, six ans après la blessure. M. Maussion fit l'ouverture du cadavre: il trouva la balle enchatonnée dans le ventricule droit du cœur, près de sa pointe, recouverte en grande partie par le péricarde, et appuyée sur le septum medium."

Meckel, in his *Manual of Anatomy*, refers also to the fact of the heart being wounded without injury to its envelope. His words (translated by Dane) are, "contusions of the chest, or the possible penetration of foreign bodies, as of *musket-balls*, also tear the heart, even where the parts surrounding this viscus are uninjured."

Entertaining no doubt, therefore, that the wound was caused by the direct contact of the ball, bearing the pericardium before it, I think the manner of its formation may be more readily understood by supposing that, at the instant of being struck, the heart was in the act of contraction, its fibres hard and rigid from their muscular action. In this state, the ball suddenly impinging produced an effect similar to what happens to an over-braced harp-string when struck. The fibres snapped across. Allowing that the pericardium had been driven into the wound, it would probably soon have been forced out by the efforts of the heart to expel the blood; but this might have delayed the individual's death beyond the short time he lived after receiving the wound. It is, therefore, more probable that the ball, being nearly spent, did little more than graze the heart, being deflected by the tough pericardium, while the principal part of the solution of continuity was owing to the snapping across of the fibres, a consequence of the shock. That the ball was nearly spent is evident from the little injury suffered by the right lung, against which it struck with only force enough to perforate the pleura and induce engorgement, and then falling into the cavity of the chest."—*Dublin Medical Press, from the American Journal of Medical Sciences.*

PATHOLOGY.

REMARKABLE CASES OF CARDIAC DISEASE IN THE HORSE.

Case of Hypertrophy of the Heart, with Patency of the Aortic Valves. By Mr. H. FERGUSSON, Her Majesty's Veterinary Surgeon for Ireland.

THE subject of Mr. Fergusson's case was a large and very powerful draught-horse, upwards of twenty-three years old. For the last fifteen or sixteen years he was never known to have lain down. He, however, on several occasions fell, even while standing in harness; but he more frequently tumbled down when exerting his muscular power to the utmost, as in pulling an unusually heavy load. His bearing was peculiar. Even when exerting himself to the utmost in dragging an unusually heavy load up hill, he invariably held his head and neck remarkably high, never even extending them, as draught-horses do when their powers are heavily taxed. These peculiarities induced Mr. F., about two months previously to the animal's death, to auscultate that portion of the thorax occupied by the heart. He at once pronounced him to have disease of that organ. His affection was concluded to be patency of the aortic valves, with hypertrophy of the heart. (The nature of the sounds observed in this examination is, un-

fortunately, not even hinted at.) The animal having fallen in his stable in a completely exhausted state, he was ordered to be killed. The result of a *post-mortem examination* was as follows:—Every organ and tissue was perfectly normal, excepting the heart, the hypertrophy of which was astonishing; and the semilunar valves of the aorta were so contracted at their floating margins as to have been physically incapable of preventing a retrograde motion of the blood from the main trunk of the aorta back into the left ventricle. One of the valves was thickened to a most extraordinary extent. All the articulations of the skeleton were free from disease: the examination extended even to those of the vertebrae. Hence the author is justified in concluding that the animal's not having lain down for so many years was not the result of articular disease. —*Veterinary Record*, Jan. 1846.

Case of Disease of the Aortic, Mitral, and Tricuspid Valves in a Horse. By WILLIAM PERCIVAL, Esq., V.S. First Life Guards.

THE subject of this case was a black mare, three years old, purchased for the service of the First Life Guards. In May, 1845, she was attacked with symptoms of the influenza at that time prevalent among the young horses of the regiment, but in eleven days she was again quite well. In August she was found to suffer from "weakness" in the loins, no signs of disease about the joint having been previously detected. In October, the author's attention was drawn to the animal, which was dull and dispirited, and appeared to have soreness and pain in moving her hind parts. The only other symptom worthy of remark at that time was a peculiarly free-beating distinct pulse, about 60; but, as there was then no disturbance of her respiration, not much notice was taken of this circumstance. Three days afterwards, the narrator was struck with the extraordinary pulsations he saw in the jugular veins; they were like the vibrations of an elastic tube which, by some internal force, had become suddenly filled to distension, even to coiling and actual saltation out of its place, and as suddenly emptied again. On applying the ear to the left side of the chest, the heart was found "thumping" the ribs in an extraordinary manner. The impulse was both forcible and distinct, could be heard on the right as well as on the left side, indeed through almost any part of the parietes of the thorax, and in the intervals when it was not heard there was a tumultuous sort of sound, destroying the rhythm of the heart's actions. The regurgitation of blood into the jugular vein was palpable enough; at the same time it was evident, from the extraordinary sounds of commotion

heard everywhere in the region of the heart, that cardiac disease of some kind or other was the nature of the mare's complaint. It was only at times that her respiration became disturbed. She had shown some tumefaction of the legs from the first; but at this time her oedema was becoming a more prominent symptom. No fresh symptoms presented themselves until the time of her death, which happened on the 25th of October, she standing up the last day to the moment of her falling and being seized with convulsions, in which she died.

Post-mortem examination.—The lungs were unusually pale, contained very little blood, and were, in a measure, concealed from view, and compressed by the extraordinary bulkiness of the pericardium and its contents. The pericardium contained about two ounces of fluid of the ordinary character. The heart weighed 9 lbs. 11 oz.: the ordinary weight of the heart in a horse of this age being commonly something less than 7 lbs. Appearances were noticed which the author attributes to inflammation of the close pericardium. The muscular substance of the heart was quite free from any signs of inflammation. Both the right auricle and ventricle showed increased thickness of their walls and their cavities; that of the latter in particular, as well as the auriculo-ventricular opening, were palpably dilated. The left auricle and ventricle were also in a state of dilatation, but without any material increase of their substance. The valves were the parts especially observed, and those most altered were the semilunar valves at the mouth of the aorta. The membranous substance of these valves was altogether changed into thick wart-like growths, presenting cauliflower or fungus-like edges, resembling very much what one sees in warts with ragged edges growing from the penis, and occasionally from the skin. One of these semilunar valves presented a bunch of the magnitude of a walnut; the excrescences of the other two were about as large as good-sized peas. The unnatural growths proceeded from the convex or ventricular surface of these two valves, their concave or aortic surfaces being still, at their attachments, membranous; whereas of the valve most diseased not a vestige of membrane remained. The *bicuspid valves* were in a similar state of disease; but in them it was a less advanced stage. They were both more than treble their natural thickness, their under or ventricular surfaces having the tubercular condylomatous feel, their upper surfaces and their attached parts being in appearance healthy. The *bicuspid valves* around their floating borders were at least four times their ordinary thickness, and from the inferior or ventricular surface of two of the valves—from one more than the other—were growing

exertences of the same nature as those above described, of the magnitude of large peas; the superior auricular sides presenting, as in the former case, their natural aspects. The semilunar valves of the pulmonary artery bore no marks of disease. The endocardium exhibited the same red streaks and spots, signs of inflammation, as had been observed upon the pericardium. Upon examining the hock joints, extensive arthritic disease was observed.

The author remarks,—“connecting all the circumstances of the case together—the state of soundness, the influenza prone to arthritic translation, the supervention of arthritic disease itself, followed by cardiac disease and death—have we not fair reason to come to the conclusion that the arthritic disease, in which the influenza, as it would appear, terminated after the mare had been turned out again into the straw-yard, had by metastasis (induced, perhaps, by great exposure to wet weather) struck inwardly upon her heart, produced in it sub-acute pericarditis, with endocarditis, and so diseased and ultimately altered the structure of the valves?”—*The Veterinarian*, Jan. 1846.

[We have quoted these cases at considerable length, from the interesting illustration which they afford to the fact that the laws which operate in the causation of disease are nearly the same in the lower mammalia as in the human subject. We have always believed that most valuable and interesting materials in elucidation of morbid processes which have hitherto baffled the inquiries of morbid anatomists, and physicians, who have merely attended to the lesions of the human body, might be collected by those who are willing to study disease in the inferior animals.—ED. GAR.]

BIRTHS & DEATHS IN THE METROPOLIS During the week ending Saturday, Oct. 2.

BIRTHS.	DEATHS.	Av. of 5 Awt.
Males.... 721	Males.... 589	Males.... 528
Females.. 733	Females.. 554	Females.. 518
1454	1143	1046

DEATHS IN DIFFERENT DISTRICTS.

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,536)	153
NORTH—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 266,303)	194
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	207
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 293,247)	273
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich .. (Pop. 479,469)	316
Total	1148

CAUSES OF DEATH.

ALL CAUSES	1143	Av. of 5 Awt. 1046
SPECIFIED CAUSES	1140	1039
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	317	211
Sporadic Diseases, viz.—		
2. Dropsy, Cancer, &c. of uncertain seat	150	104
3. Brain, Spinal Marrow, Nerves, and Senses	169	157
4. Lungs and other Organs of Respiration	227	333
5. Heart and Bloodvessels	30	34
6. Stomach, Liver, and other Organs of Digestion	60	74
7. Diseases of the Kidneys, &c.	8	9
8. Childbirth, Diseases of the Uterus, &c.	9	14
9. Rheumatism, Diseases of the Bones, Joints, &c.	4	7
10. Skin, Cellular Tissue, &c.	2	2
11. Old Age	35	65
12. Violence, Privation, Cold, and Intemperance	110	29

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	18	Convulsion	46
Measles	47		
Scarlatina	50	Bronchitis	34
Whooping-cough ..	19	Pneumonia	47
Diarrhoea	53	Phthisis	121
Typhus	79	Dia. of Lungs, &c.	10
Dropsy	18	Teething	13
Sudden deaths ..	42	Dia. Stomach, &c.	4
		Dia. of Liver, &c.	10
Hydrocephalus ..	20		
Apoplexy	50	Childbirth	5
Paralysis	15	Dia. of Uterus, &c.	4

REMARKS.—The total number of deaths was 97 above the weekly autumnal average. This excess is chiefly owing to the prevalence and fatality of zymotic diseases, especially of diarrhoea and typhus.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	30.00
“ “ Thermometer	51.7
Self-registering do. max. 82.6 min. 24.7	
“ in the Thames water — 56.7 — 54.3	
a From 12 observations daily. b Sun.	

RAIN, in inches, 0.7: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 2.8° above the monthly average (48.9°).

NOTICES TO CORRESPONDENTS.

MEDICAL SOCIETIES OF LONDON.—We propose publishing weekly a list of the Medical Societies of London, with the days and hours of meeting. We shall be obliged to the Secretaries if they will forward us the necessary information for the present medical session.

Dr. Sloan.—The piracy has not escaped our notice, and we shall probably take an opportunity of referring to it.

The essay on Scrofula, by Dr. King, will be inserted.

Lectures.

LECTURES

ON THE

DISEASES OF INFANCY AND
CHILDHOOD,

Delivered at the Middlesex Hospital.

By CHARLES WEST, M.D.

Physician-Accoucheur to, and Lecturer on Midwifery at, the Middlesex Hospital, and Senior Physician to the Royal Infirmary for Children.

LECTURE XIII.

Diseases of the Respiratory Organs, their frequency and fatality.—Peculiarities of the respiratory function in early life—causes of the rapid pulse and quick breathing in infancy—feebleness of the inspiratory power, and consequent tendency to collapse of the lung.

Imperfect expansion of the lungs—sometimes congenital.—Appearance of the lung—influence of inflation upon it—its causes and symptoms.—Case of its fatal termination—case of recovery from it. Diagnosis from congenital phthisis.—Treatment.

We now come, gentlemen, to the examination of the diseases of those two grand systems of the organism by which the blood is kept in motion, the requisite changes in it are effected, and the animal heat is maintained. Your attention was lately called to the fatality of the diseases of the nervous system in early life, as one grand reason for their attentive study; but this argument is still more cogent if applied to the maladies of the organs of respiration and circulation, since they destroy a far greater number of children, and occasion a mortality almost equal to that produced by diseases of the nervous and digestive systems together. It

appears, indeed, from our tables of mortality, that a third of all deaths under 5 years of age are due to the diseases of the respiratory organs, while not above one child in four dies under that age from diseases of the nervous system, and not above one in six from those of the digestive system.*

While the study of these diseases is of paramount importance, we meet with inducements to their investigation which in a great measure failed us in the case of diseases of the nervous system. Peculiar difficulties then attended us, and the truth was veiled in so much obscurity that we often saw it but indistinctly; sometimes, perhaps, altogether failed to perceive it. The same means, however, as have enabled us to bring medical knowledge, with reference to the diseases of the chest in the adult, almost to the state of one of the exact sciences, still stand us in stead here, and care and patience will enable us to discover the condition of the lungs with nearly as much certainty in an infant as in a grown person.

Nor is the greater facility of their diagnosis the only circumstance that lightens their study, but a feeling of hopefulness attends their investigation which we often missed in the subjects that have lately engaged our attention. They, indeed, furnished us with interesting pathological studies; we stood around the sick bed, and watched nature's struggles with disease that was irremediable, and we traced its effects afterwards as we examined the dead body, but the diagnosis of the affection was in many instances but the sentence of the patient's death; and we often felt that as practical physicians there was but little for us to do. We shall, it is true, meet with many such affections in our study of diseases of the chest, but happily they are few in comparison with those that, in addition to much that would interest the mere pathologist, present still more that will give ample scope for all the skill of the practical physician.

At first sight, it may seem to you that there can be little in the organs of respiration and circulation in early life different

* Table showing the proportion per cent. of deaths from different causes in childhood, in the metropolis, as compared with subsequent life.

[Deduced from the 5th Report of the Registrar-General.]

	Under One year	Between 1 and 2.	Between 3 and 5.	Under 5.	5 to 10.	10 to 15.	At all Ages above 15.
From Diseases of the Nervous System	32.5	19.5	18.3	25.4	15.8	9.7	9.1
Ditto, ditto, Respiratory System	28.2	41.	37.2	34.2	30.9	34.1	31.5
Ditto, ditto, Digestive System	17.5	13.5	5.2	14.2	6.5	8.3	5.2

from their condition in riper years. And it is true that the part they play is as important at the first hour of existence as in the most advanced old age, and that their structure and functions undergo no such changes as we have noticed taking place in the brain during infancy and childhood. But nevertheless they present some important peculiarities in the young, with which you must be acquainted before you can hope to treat their diseases with success.

The condition of infancy is one of unceasing development; all the organs of vegetative life have, so to speak, double work to do, not merely to supply the daily waste, and to remove effete and useless matter, but to build up that wondrous edifice the human body. It is probably in great measure on this account that the blood in infancy and childhood runs its course more rapidly, and that the lungs vivify it more frequently than in adult age. We shall probably not be far wrong if we estimate the average frequency of the pulse in the grown person, when making no exertion, at 75, and of the respirations at 12 in the minute*. In infants not above a week old, the average frequency of the respiration is 39, and of the pulse 102; but the former may rise to 84, and the latter to 140, as the result of some transient excitement or disturbance, and wholly independent of disease. Until the sixth year the average frequency of the pulse continues at 102; and though that of the respiration diminishes, yet it does not fall below 30. The variations between their maximum and minimum frequency are now, however, circumscribed within limits which grow narrower as the child approaches manhood†.

Although the rapid pulse and quick breathing of early life are probably in great measure due to the activity of the vital processes, yet the wide variations in their frequency induced by very slight accidents, lead to the suspicion that this is not their only cause, but that both phenomena are to a certain extent indications of the infant's weakness. This suspicion is still further strengthened by our knowledge of the fact, that the quantity of carbonic acid exhaled at each expiration diminishes in proportion as the expirations are more frequent‡; so that it is plain that the rapidity of the respiratory movements is not of itself a measure of the activity of the respiratory process. But still stronger proof of this fact may be

adduced. Animal heat is generated by respiration. If, therefore, the activity of the vital processes were in proportion to the rapidity of the breathing, the new-born infant should be warmer than the child, and the child than the youth. But this is not so, for M. Roger has found, as the result of many most elaborate investigations, that the temperature of the child at six years of age exceeds that of the infant of a week old by more than half a degree of Fahrenheit, although the respiration is nearly a fourth less frequent.

There seems, then, good reason for believing that the rapid breathing of the child is to some extent the result of its more delicate frame rendering it unable, at a single effort, to inspire as deeply as the more robust adult, so that it is compelled, by the frequent repetition of its efforts, to make up for their comparative feebleness. Quite in keeping with this is the small power of resisting cold, or of maintaining an independent temperature, which is a distinguishing peculiarity of early life. If the young of any warm-blooded animal be exposed to a low temperature, its respiration at first increases in frequency, but if not soon restored to a warmer atmosphere the nervous energy that should set the respiratory apparatus in motion becomes still more depressed, air enters the lungs imperfectly, the inspirations grow less frequent, and the warmth of the body sinks rapidly down to that of the surrounding medium. Nor is this all; but it often happens, if a young infant has been thus exposed to the cold, and especially if this has been done before the respiration had become properly established, that no subsequent removal to a warmer atmosphere will suffice to raise the temperature, or to set in proper activity the respiratory process.

But not merely is the respiratory apparatus more delicate in the child than in the adult, for so are all the organs in early life, but it is feebler, as compared with the work it has to do, with the difficulties it has to overcome: and this constitutes a most important peculiarity in the physiology of respiration in early life, and greatly modifies its pathology.

The interesting researches of Mr. Hutchinson* have shown us that in the case of the adult, "the resistance to the ordinary breathing force, independently of the elastic power of the lungs, is equal to lifting more than 100 lbs. at every ordinary inspiration." The elasticity of the walls of the chest which present this resistance is, in proportion to the size of the thorax, as great in the infant as in the adult; but how much smaller is the muscular power

* This result is afforded by the numerous and careful observations of Professor Vierordt: see his article *Respiration*, in Wagner's *Handwörterbuch der Physiologie*, Part 12, 8vo. Brunswick, 1845, p. 874.

† The chief authority for the statements in the text is the valuable essay of M. Roger, *De la Température chez les Enfants*, 8vo. Paris, 1844.

‡ See Vierordt's *Experiments* on this subject, loc. cit. p. 887.

* On the Respiratory Functions, in vol. xxix. of the *Medico-Chirurgical Transactions*.

by which this resistance is to be overcome! You see proof of it in the ordinary mode of respiration of a young infant, which presents something almost of difficulty. The breathing is quick and short, then after a few seconds there succeeds a pause, and then the hurried respiratory movements begin again, while the slightest disturbance, or the most trivial excitement, will at any time raise the frequency of the inspirations by ten or twelve in the minute. This respiration, too, is almost entirely abdominal; the chest moves but little, and its walls are but little expanded; and the ear detects in the respiratory murmur little or nothing of that clear loud sound which is so characteristic of a subsequent period of childhood, and with which you all are familiar by the name of puerile respiration. This peculiarity of the breathing in early infancy, to which M. Trousseau was, I believe, the first to call attention, is another token of the feebleness of the inspiratory power. As the child grows older, and its strength increases, and its muscular system becomes more developed, the chest expands with each inspiration, and the faint respiratory murmur is succeeded by the loud puerile breathing which is heard as the air enters into the smaller air-cells.

The resistance of the walls of the chest, however, is not the only obstacle to be overcome at each inspiratory effort, but the lungs themselves are furnished with an elastic fibrous investment, processes of which dip down into their substance, and form the parietes of the different lobules. If you blow air forcibly into the lungs after their removal from the body, the resiliency of their tissue will expel a large proportion of the air the moment your effort at inflation is suspended. This elasticity of the lungs, then, is constantly tending to empty them of air, and constantly resisting the introduction of more. The want of breath, however, puts the respiratory muscles into play; the man takes a deep inspiration, and by this effort he unconsciously overcomes the resistance of the chest and the elasticity of the lungs. The new-born infant feels the same want, and makes the same effort, but its muscular power is small, and its inspirations are often so feeble as to draw the air in some parts only into the larger bronchi, while many of the smaller air-tubes remain undilated, and much of the lung continues in its foetal state. The blood being thus but imperfectly aerated, all the processes of nutrition go on imperfectly; the vital powers languish, the inspiratory efforts become more and more feeble, the temperature sinks, and the infant dies. But not only may this state persist as the result of imperfect respiration at birth, but cold, or the want of sufficient food, or any other cause that impairs the

already feeble muscular power, favours its supervention. As the power of the inspiratory muscles is impaired, the air no longer penetrates into the lungs so far as it once did, while the residual air is gradually driven out of the pulmonary cells by the elasticity of the lung, and portions once permeable to air become, in the course of time, altogether useless. Or, an increase of the ordinary resistance to the entrance of the air will have the same effect; and if the pouring out of mucus into the bronchial tubes should much obstruct them, large portions of lung will by degrees become emptied and collapsed, the dyspnoea will grow urgent, and the child will die with symptoms such as, in the adult, result only from much serious structural disease.

The possibility of a large portion of the respiratory apparatus remaining useless from birth, or becoming so afterwards without any serious disease of these organs, is a most important element in the pathology of infancy and early childhood. It warns us to be on our guard during the cure of various maladies against a danger which, in more advanced life, we have not to apprehend; while, at the same time, it teaches us that the dyspnoea, the hurried breathing, and many other symptoms which, in the adult, would call for most active treatment, may result, in infancy, from simple weakness, and require stimulating rather than depletory measures.

Before we proceed to study the diseases of the respiratory organs in infancy and childhood, we must make ourselves thoroughly acquainted with this state of imperfect expansion of the lungs. It presents itself to us under two different circumstances.

1st. As a congenital condition: a more or less considerable portion of the lung never having become penetrated by air, but having remained in its foetal state.

2d. As an acquired condition: portions of the lung which once were freely traversed by air ceasing to admit it; and this, not from alteration of structure, but from a simple collapse of the pulmonary tissue.

It is now fifteen years since Dr. Edward Jörg gave the first clear description of the former of these two conditions, to which he applied the rather cramp name of *atektasis*, from *ατελής*, imperfect, and *εκτασις*, expansion*. We will first study this, which is the simpler form of the affection, and the examination of which will give us a clue to the understanding of the second form.

If you examine the body of a new-born infant, or of one that has survived its birth but a few days, you will sometimes find

* In his dissertation *De pulmonum vitio organico*, &c. Leips. 1832; and afterwards more fully in his work *Die Fötuslunge im gebornen Kinde*, 8vo. Grimma, 1835.

patches of the lung of a dark red colour, and depressed below the surrounding tissue, thus giving to the surface of the organ an uneven appearance. These darker portions, which exactly resemble for a lung, are solid to the touch, do not crepitate at all under the finger, and sink immediately if thrown into water, while no minute air-bubbles are intermingled with the small quantity of reddish serum which exudes on pressure from their divided substance. They are not friable, or easily torn, their cut surface is perfectly smooth, closely resembling a piece of muscle, and, if examined under a lens, the pale collapsed air-tubes are seen intersecting their substance, and scarcely distinguishable from the small vessels, which are almost devoid of blood.

If air be blown into a lung some lobules of which have this appearance, it will permeate the collapsed air-tubes; the pulmonary vesicles will by degrees become distended, and the solid lobules will rise to a level with the rest of the lung, will acquire the same colour and consistence, and, like other parts of the organ, will float in water. A single inflation, however, is by no means sufficient to render this change permanent, but the moment the tube is withdrawn the air will escape, and the lobules recently distended will again collapse, and sink below the rest of the lung; and their colour, too, will become dark, though less so than before. Even if after you have distended the lung to the utmost, you then pass a ligature round the bronchi, and allow the lung to dry, there will generally be a difference very perceptible between the size of the air-vesicles which had been inflated by your efforts and that of those which had been distended during life by the natural process of respiration.

The force required thus to distend the collapsed portions of the lung is very variable: sometimes it requires all the force that you can possibly exert, and continued for some minutes. If the child have survived for several weeks, the air will penetrate only very imperfectly into the collapsed lobules, while in some parts the resistance will be greater than it can overcome, and the most forcible inflation will be followed by no effect. The situations in which this condition is most frequently met with are the languette and lower edge of the upper lobes, the middle lobe of the right lung, and the posterior part and lower edge of the lower lobes; and inflation restores these parts to a natural condition much less easily than it does any patches of the same kind in other situations. Whether the impermeability of some collapsed lobules is owing to adhesions having taken place between the opposite surfaces of the minuter bronchi, as

has been suggested, I cannot pretend to say, but the supposition is plausible.

It is usual to find, in connection with this state of the parenchyma of the lungs, that the pulmonary vessels contain less blood than usual, that the foramen ovale is unusually open, and the ductus arteriosus but very imperfectly closed. If the child have survived its birth but a short time, the brain is often found congested; but otherwise there is often nothing observable more than anemia of all the organs, together with a general state of atrophy. Sometimes bronchitis attacks a lung thus affected, and, besides the presence of mucus in the air-passages, there is then very often a state of congestion of the lungs which renders the contrast between the collapsed and the healthy lobules less striking.

The causes of this condition are not clearly made out. Dr. Jörg has attributed great importance to precipitate labour as a frequent cause of its occurrence, and has suggested a somewhat fanciful theory to explain its mode of production. He conceives that one grand use of the uterine contractions is gradually to enfeeble the circulation through the placenta, and thus to induce in the fœtus that *besoin de respirer* which shall excite the complete establishment of respiration immediately on its birth. If, however, by the very rapid course of labour, the child should be born while the fœtal circulation is still going on with unimpaired vigour, the want of air will not be experienced by the child, and its attempts to breathe will be feeble and imperfect. It is probably better, instead of indulging in speculations of this sort, to content ourselves with the simple statement that when, from any cause whatever, the establishment of respiration at all has been attended with difficulty, there is a very great probability that its establishment will never be complete, but that some lobules only will receive the air, while it will not penetrate into other parts of the lungs. The probability of this occurring, too, will be still greater if the children be weakly, or ill-nourished when born, or if they be exposed soon after birth to cold or other unfavourable hygienic influences such as are calculated to interfere with the due performance of respiration.

Cases in which this condition of the lungs exists usually present the history of the child having been apparently still-born; and, though resuscitated after a time, yet still presenting the peculiarity of the cry never having been strong and loud like that of other children. Even after breathing has gone on for some time, such children usually appear feeble; and though they may have attained the full term of fetal life, yet they can scarcely suck, although they often make the

effort. An infant thus affected sleeps even more than new-born infants usually do; its voice is very feeble, and rather a whimper than a cry; and the chest is seen to be very little, if at all, dilated by the respiratory movements. The temperature falls, the skin becomes pale, and the lips grow livid, and slight twitching is often observed about the muscles of the face in the course of a few hours. The difficulty in sucking increases, the voice grows weaker and more whimpering, or even altogether inaudible, while respiration is attended with a slight r le, or an occasional cough, and the convulsive movements return more frequently, and are no longer confined to the face, but affect also the muscles of the extremities. Any sudden movement suffices to bring on these convulsive seizures; but even while perfectly still the child's condition is not uniform, but it will suddenly become convulsed, and during this seizure the respiration will be extremely difficult, and death will seem momentarily impending. In a few minutes, however, all this disturbance ceases, and the extreme weakness of the child, its inability to suck, its feeble voice, and its frequent and imperfect inspirations, are the only abiding indications of the serious disorder from which it suffers. But the other symptoms return again and again, till at length, after the lapse of a few days, or a few weeks, the infant dies.

But I will relate a case which may serve to impress these characteristics on your memory. A little boy, three weeks old, was brought to me at the Children's Infirmary on March 13, 1846. He was puny, emaciated, with a cold surface, and bloodless conjunctiv . His face, which was wizened like that of an old man, was occasionally distorted by slight convulsive twitches, and these fits, as the mother termed them, were, according to her account, sometimes much more severe. The abdomen was tympanitic, and it alone was seen to move during respiration, there being almost no lateral expansion of the chest. The ear applied to the chest heard but little air entering, and the cry was a stifled whimper, in which none of the inspiratory sound, the *reprise* of the French writers, was distinguishable. The child sucked difficultly, and had wasted ever since its birth, though no diarrhoea existed, but the bowels on the contrary shewed a tendency to constipation.

The chest was rubbed twice a day with a stimulating liniment, and a mixture was given containing some ammonia and the compound tincture of bark. Under this treatment the child appeared to improve; it began to breathe less rapidly and in a less laboured manner, and its cry became louder. The parents, however, were miserably destitute, the mother in an ill state of health,

so that her milk afforded but a very imperfect sustenance for the child. From the beginning of April he grew less well, and began to have occasional attacks of general convulsions, in one of which he died on April 26, 1846.

On examining the body large portions of both lungs presented the appearances which I have described as characteristic of their imperfect expansion, but inflation restored them to a crepitant state. Some patches, however, though they admitted air and assumed the same colour as the rest of the lung, yet could not by any effort be dilated so completely as to rise to a level with the surrounding tissue. The foramen ovale was open, the margin of the valve for fully half its circumference not being adherent, although the valve was sufficiently large for its closure. The ductus arteriosus also was quite permeable, although of considerably less calibre than during foetal life.

This case affords a very good specimen of one way in which the affection leads on to a fatal termination, but sometimes, and probably in those instances in which the affected portion of lung is less considerable, a less formidable train of symptoms usher in the fatal event. Convulsive twitchings, such as I have before mentioned, do not occur, nor are periodic exacerbations of the symptoms observed, but the child is merely feeble and its breath is short, and it has an occasional cough. It sucks, though with difficulty, but it loses flesh, the bowels become disordered, and medicine is unable to restrain the diarrhoea. The unchecked diarrhoea increases the emaciation and exhaustion of the child, which dies at length worn out and wasted to a skeleton.

Sometimes, too, we meet with cases in which the child eventually recovers, and it is then very interesting to watch the gradual diminution in the frequency and violence of the paroxysms of dyspnoea, while the respiration grows by degrees more equable, the cry louder, the power of sucking increases, and the child at length attains to perfect health.

A little boy, 4 months old, was placed under my care by his mother, who informed me that the child had presented in some unnatural position during labour, so that manual interference was required to effect her delivery: that when born her infant appeared dead, and was recovered only after very great difficulty, and after the occurrence of convulsions; the convulsions had since returned almost every day, sometimes indeed they occurred several times in the same day, and always came on with greater frequency by day than by night. The attempt to suck often induced them, as did also any rapid movement about the room, or any sudden change of posture. During the fits the child

did not struggle much, but he always turned extremely livid about the face and mouth. No fit ever lasted longer than five minutes, and during the intervals between them the child seemed pretty well, except that he often suffered from a suffocating cough.

He appeared tolerably well-grown and well-nourished, and the temperature of the surface was nearly natural. The respiration, however, was very hurried, and was almost entirely abdominal, the chest being hardly at all expanded. The cry, moreover, was feeble, and without *reprise*. There was a considerable want of resonance of both sides of the chest posteriorly, and deficient entrance of air into the back of both lungs. Both the dullness and the scanty admission of air were more obvious in the left than in the right infra-scapular region, and some mucous r  le was heard in the former situation.

The child was placed in a hot bath, and an emetic was given it every night; the chest both in front and back was rubbed twice a day with a stimulating liniment, and the face was ordered to be sprinkled with cold water whenever any threatenings of the fits came on.

At the end of five days the child was better, and the cry louder, though without any distinct *reprise*. Small doses of the ferro-citrate of quinine were now combined with the other remedies, while the emetics were discontinued, as on some occasions they had appeared to excite the convulsions. First the cry grew louder, then the appearance improved and the manner became more cheerful, then the cough was less troublesome and the breathing less habitually wheezing, and at the same time the chest began to expand more, and the marked dullness of its lower parts gradually diminished. At the end of five weeks the child was discharged with increased flesh and invigorated strength, and with no ailment more serious than a slight degree of wheezing respiration.

The history of this patient may serve to show us that even very serious symptoms should not lead us to despair of recovery, while it illustrates the importance of forming an accurate diagnosis between this affection and congenital phthisis, (the only malady with which it is likely to be confounded,) lest we either cherish unfounded expectations, or discourage hopes that might reasonably be entertained.

A little care will usually suffice to enable us to distinguish between these two affections, notwithstanding some general points of resemblance between them. The symptoms of the imperfect inflation of the lungs date from the infant's birth: but it scarcely ever happens that tuberculous disorganization of the lung is so extensive in the new-born child as to interfere with the establishment of the respiratory function. But not only

do not the symptoms of phthisis appear so early, but they likewise seldom advance so rapidly as those of atelektasis. Phthisis too is not from the beginning attended with the same debility, or with difficulty in sucking, while it is associated with a febrile action which is quite wanting in atelektasis. The head symptoms which in so large a number of cases attend the imperfect inflation of the lungs are absent in phthisis, while, lastly, auscultation would furnish some clue to the real nature of the case; in the one there would, in general, be simply a deficiency of air; in the other case respiration accompanied with r  les and often with bronchial breathing.

The treatment required by this affection need not detain us long. The importance of maintaining an equable temperature around every child in whom respiration is not duly performed, cannot be too much insisted on; and the power of generating heat being as you know much diminished, this temperature ought not to be below 70  , and in bad cases may be even 10   higher. Besides attending to preserve this warmth around the child, benefit often accrues from the employment of the hot bath, once or twice every day, at a temperature of 100   Fahrenheit, to which mustard may be added to render it more stimulating to the surface. The child should not be allowed to remain longer than five minutes in the bath, and should be enveloped in hot flannels immediately afterwards to prevent its taking cold. The back and chest should be rubbed twice or oftener every day with a stimulating liniment, as camphor or soap liniment, which may be diluted with a little oil, if it be too irritating to the skin. If the child be very feeble, stimulants may be given, of which there are none better than the compound spirits of ammonia or ether; or the spiritus ammoni  e succinatus; the unpleasant pungency of which remedies is concealed by milk better than by any other menstruum. The daily employment of a gentle emetic of ipecacuanha has in some instances appeared to be of service, not merely by relieving the air tubes of any mucus that may have accumulated there, but by inducing several deep inspirations, and thus aiding the complete establishment of respiration. As the child improves, the more directly stimulating medicines may be withdrawn, and tonics substituted for them, among which few are better than the extract of cinchona. Its bitter is not unpleasant, and when duly sweetened and mixed with a little milk few children refuse it. It has too the great advantage of not disordering the bowels; a point of no small importance in any case in which diarrhoea is likely to occur. In some cases there is a sluggishness of the bowels, and a deficiency in the secretion of bile; very minute doses

of the Hydr. c. Cretâ will often remedy the latter, and the use of a soap suppository will frequently render the internal employment of any purgative needless. The child should be put to the breast unless it be very feeble, but in that case should not be allowed to exhaust its strength in fruitless attempts to suck. It will be better to draw the breast, and give the child its mother's milk by means of a spoon or from a bottle, which latter plan has this advantage, that while it costs the child but little effort to get its food we avoid the risk of its forgetting how to suck; an inconvenience which attends the use of the spoon if continued for any length of time. Artificial feeding is not at all desirable in such cases, though sometimes, if the child be very weak it may be necessary at first to give a few drops of brandy in its milk every three or four hours. This plan of treatment must be patiently persevered in, nor must the supervention of symptoms of an apparently acute character induce too wide a deviation from it. The head symptoms in particular must be combated cautiously, lest by too great a solicitude to overcome them we destroy the patient rather than the disease.

Original Communications.

ON

MORBID SYMPATHIES;

OR THOSE ASSOCIATED STATES OF DISORDER WHICH MOST FREQUENTLY PRESENT THEMSELVES TO THE PHYSICIAN.

Being the Croonian Lectures delivered at the Royal College of Physicians in March and April, 1846.

BY JAMES COPLAND, M.D. F.R.S. &c.

[Continued from p. 664.]

I now come to the consideration of the sympathies connected with the circulating and respiratory functions; and here I shall have to offer some observations on the importance of considering morbid action with reference to the state of the circulating fluids. Having discussed, as fully as my time could permit, the nervous connections giving rise to numerous and obvious sympathies, I have now to take a general view of alterations of the blood itself, as being productive of diseased action, either in succession or contemporaneously, in two or more distinct or

distant organs, or more or less throughout the frame. In disorders of the circulating fluids, particularly of the blood, the most extensive and serious associations of disease often arise to which the animal economy is liable.

The circulating and respiratory functions are intimately associated with each other, not only by nervous and vascular connections, but also by position and by the nature of the functions themselves, there always being a certain amount of change of the constituent elements of the blood during respiration, and also a reaction of the blood on the respiratory organs, and on the heart and blood-vessels. These vital functions, although presenting more or less prominent relations to disorders of other or distant organs, are often owing to these circumstances jointly and correlatively affected.

Before I take a cursory view of the results of chemical researches into the morbid changes of the blood, I shall briefly notice the *healthy composition of this fluid*. From a series of analyses, Simon considered that 1000 parts of healthy blood consist of $795\frac{1}{2}$ of water, and about $204\frac{1}{2}$ of solid residue. In the latter there are $2\frac{1}{2}$ of fibrin; $2\frac{1}{2}$ of fat; $76\frac{1}{2}$ of albumen; $109\frac{1}{2}$ of hæmato-globulin; and about 12 parts of salts and extractive matter. These being the mean proportions in health, it has been attempted to establish the deviations which take place in these constituents in disease. There are a number of chemists and physiologists who have performed experiments on the blood both in health and in disease, but there is a considerable difference between the results at which they have arrived; still there is sufficient agreement to warrant considerable attention being devoted to the subject.

In *disease*, the water varies from 888 parts in 1000 to 750 parts; the solid residue from 250 to 212. Of the different matters forming the solid residue, fibrine varies from $9\frac{1}{2}$ to a trace merely; the fat, from $4\frac{1}{2}$ to only $\frac{1}{2}$; the albumen from 131 to $55\frac{1}{2}$; the hæmato-globulin, from $115\frac{1}{2}$ to $31\frac{1}{2}$; the extractive matter and salts from $16\frac{1}{2}$ to $7\frac{1}{2}$; these results thus showing a very considerable variation in the quantities of the several constituents of the blood in disease.

Healthy blood, again, according to Lecanu, consists of 790 parts, in each

1000, of water, and 210 parts of solid residue. Of the latter, 3 parts consist of fibrin, 127 of blood-corpuscles, 72 of albumen, and 8 of extractive matter and salts, or what he calls inorganic matter. According to Andral and Gavarret, taking this to be the standard of health, these constituents vary in disease as follows:—The water from 915 parts in each 1000, to 725; the solid residue from 275 to 85. Of the latter, the fibrin varies from $10\frac{1}{4}$ to $\frac{1}{8}$ only; the blood-corpuscles from 185 to 21; the albumen from 114 to 57.

It must be evident that the blood which is taken from young, healthy, or robust persons, especially those of the sanguine temperament and the phlogistic diathesis, will exhibit a large proportion of blood-globules or corpuscles, and also of fibrin; whilst the blood of leuco-phlegmatic or of chlorotic persons will furnish the smallest proportion of these constituents and the largest quantity of water. When the blood is removed, or being removed, from a vein, and especially as it circulates in the vessels, there certainly exists in it more or less carbonic acid, although the exact quantity—probably of various amount with the varying state of the system—can hardly be shown by experiment. It is doubtless given off so immediately on being removed from a vein that its exact quantity scarcely admits of demonstration.

The blood also presents a certain odour, either independently of, or connected with, the halitus or vapour, or carbonic acid, which it exhales, when drawn from a vein or artery; and this odour is very remarkable in malignant and infectious diseases, and especially in pestilential fevers.

It is very manifest that the blood when circulating in the system possesses a vital endowment derived from the organic nervous influence bestowed by means of the organic nerves on the blood-vessels and on the tissues and parenchyma of organs through which the blood circulates. This vitality of the circulating fluids, thus derived, may be traced in the chyle, and is manifested by this fluid as soon as it begins to circulate in the lacteals, inasmuch as it presents analogous changes to those evinced by the

blood itself, as respects coagulation, when removed from these vessels.

The globules of the chyle present the first appearances of organization, or, in other words, assimilation and organization, commencing in the chyle and manifesting themselves in the conformation of the globules formed in this fluid, proceed as the chyle passes through the glands, becoming more distinct and perfect as the chyle advances and reaches the ducts conveying it into the blood. The globules of the chyle, being thus more perfect and more numerous the nearer they approach the venous circulation, and after having passed through lacteal glands and having derived some vitality from the vessels and glands through which they have circulated, possess in consequence a vital relation with these parts, tending not merely to promote their circulation onwards to the blood-vessels, but preparing them also for further changes,—for a more advanced grade of organization, when they have reached this goal, and for the assumption of the character of perfect blood-globules.* It is not at all improbable that the assimilation or the organization of the globules of the chyle, as well as of those lymph-globules circulating in the lymphatics, either originates in, or is advanced by, the glands in the course of both lacteals and lymphatics; and it may also be inferred that the further organization of the lymph-globules—both those carried into the blood from the lacteals, and those from the lymphatics—or their conversion into the fully formed red blood-corpuscles, is owing to the vital operation of those

* Since these lectures were delivered at the College of Physicians, the researches of Mr. Wharton Jones on the blood have been published in the Philosophical Transactions. From these it would appear that the chyle-corpuscles pass through the following phases of development before or by the time of their reaching the venous circulation:—*First phase*, that of granular cell, the first stage of this phase being coarsely granular, the second stage, finely granular: *second phase*, that of nucleated, the first stage of this phase being uncoloured, the second being coloured. He considers that the nucleated cell, in its second or coloured stage, passes into the red-corpuscle in the fully formed blood of man and the mammalia, and that the nucleated cell is thus changed into the fully formed red blood-corpuscle by the celliform nucleus of the nucleated cell being set free by the bursting of the cell itself, the nucleus having become filled and red by the secretion of globuline and colouring matter into its interior.

tion,
circu-
tion,
and
chyle
the
lin-
ses
ore
yle
me-
les
at
ly
al
ne
de
st,
my
is
ig
or
a
di-
st
x
s
t
e
s

glands which are not provided with excreting ducts; as the spleen, the supra-renal glands, and the thymus, and probably also of the liver. The facts long and frequently remarked by me of anæmia or deficiency of red-globules being always the consequence of torpor, enlargement, or other disease of the spleen or liver, favour this view of the influence of these viscera in the assimilation or development of the chyle and lymph-globules into red blood-globules. It may therefore be inferred from the organization of the lacteal and lymphatic vessels and glands, and of those non-excreting glands just mentioned—from the circumstance of these organs being abundantly provided with ganglionic nerves, blood-vessels, and absorbents, that the fluids carried to, and circulating through them, undergo an assimilation, and that this assimilation amounts to a progressively increasing organization of the globular constituents of these fluids,—this being the function of the organs now referred to. Organization thus commencing in the chyle or lymph, as respects the perpetuation of the individual animal, it must necessarily follow that these fluids participate in the vitality existing in the vessels and organs through which they circulate. This vital endowment, whether existing in the fluids as a simple emanation from the containing structures, or actuating them more efficiently through the medium of their globules, is evidently concerned in the phenomena displayed by these fluids, as well as by the blood when removed from the vessels, as I contended many years ago; the changes observed to take place in these fluids, and more especially their coagulation, being the consequences chiefly of the loss of the vitality or of the organic nervous influence or emanation endowing these fluids.

If, therefore, it be admitted—and it cannot be rationally disputed, or with a due recognition of healthy and of morbid phenomena—that the circulating fluids are thus vitally endowed, it must necessarily follow that this endowment is dependent upon, and co-ordinate with, the vitality or the organic nervous energy of the frame; and, further, that whatever contaminates these fluids, must necessarily co-ordinately affect the vitality of the

frame through which the contaminated fluids circulate.

Contamination of the circulating fluids may commence—1st, in the lacteals, through the medium of the digestive canal;—2d, in the lungs, through the medium of the respiratory surfaces;—3d, in any part of the external surface of the body;—and, 4th, in any part or tissue of the body, by a self-contamination; and, thus originating, the contamination may manifest itself either generally, coetaneous, and co-ordinately throughout the frame; or prominently, and especially upon particular organs or parts, other organs or parts betraying comparatively but little disturbance. Of these sources of contamination I shall take a very brief and passing view, as far as they may elucidate the associations of disease.

If the lacteals communicate with veins concurring to form the portal circulation, as some assert, and believe that they have demonstrated, and whether this communication take place before or after they have passed through their glands, or does not take place at all, the injurious influence of a contaminated or unwholesome chyle upon the circulation, and the organs through which it passes, will readily be admitted. If the contaminated chyle passes more directly into the blood circulating to the portal vessels, and without pursuing the longer route to the general venous circulation, it must necessarily follow that the functions, and even the organization of the liver and its vessels, will be placed in great jeopardy; and it may be further inferred that, whatever may be the route which the chyle takes, the globules will not undergo those healthy advances towards complete organization either before they reach the blood, or after they have entered into it. It is even very probable that the blood, thus abounding in an unwholesome or contaminated chyle, and with imperfectly assimilated or organized chyle- or lymph-globules, will disorder the functions, and ultimately the organization of those structures and organs more immediately concerned in perfecting these globules, or transmuting them into perfect red blood-globules.

The second channel of contamination, or that through the respiratory organs, hardly requires any notice, it being so obviously one through which

the most injurious agents are conveyed into the blood itself, thereby infecting or contaminating this fluid, and through its medium either remote parts, with which the particular agent may have especial relations, or the whole frame. It is through the respiratory surfaces that the emanations from numerous sources infect the system—effluvia from the soil and its productions, and exhalations from dead animal matters and from diseased bodies; and although this source of contamination and infection is the most obvious to every one who is capable of speculating respecting the causation of disease, especially when considered in connection with the functions of the respiratory organs, yet it has been most frequently overlooked, or insufficiently estimated. The blood is affected not only by the physical constitution of the air as respects temperature, humidity, electrical conditions, and the vicissitudes of these conditions, but also by those foreign gases, vapours, and emanations from living and dead organised bodies existing on the earth's surface. These, severally, sometimes variously associated, affect both the vital condition of the lungs—the organic nervous energy of the organ—and directly, as well as thus indirectly, modify the changes which take place in the blood circulating through the lungs, or otherwise contaminate this fluid, in modes more or less specially related to the nature of the causes or agents which operate through this channel.

The *third* or cutaneous channel of contamination, is certainly less frequently influential than those already passed in review. Still all the physical conditions of the atmosphere, and all the foreign gases, vapours, and emanations floating in the air, which so readily and injuriously invade the system through the respiratory organs, also affect the functions of the skin, and thereby the conditions of the blood, and the states of the several internal viscera, and more particularly of the other excreting organs. The most serious contaminations of the circulating fluids, produced through the medium of the cutaneous surface, arises from the contact of septic or infectious fluids or matters with this surface, and from the septic influence of a foul or infected air upon this surface when it is punctured, abraded, or deprived of that

protection at any one point, which the cuticle or epithelium is destined to afford. In these circumstances, the skin itself in some instances; the lymphatics or veins, or both, in other cases; or the cellular tissue, in some; and even all these in a few, are seriously affected, and ultimately the blood itself more or less contaminated; remote parts, and even the whole frame, becoming thereby more or less implicated in the foul, septic, and disorganizing process thus commenced, and most rapidly propagated. And here I may advert to the influence of the air in many situations, but more especially in towns, and ill-ventilated places and houses, in extending disease originating in, or chiefly consisting of, lesion of the cutaneous surface; and the insufficient attention usually paid in practice to a due protection of exposed points of the cutaneous surface from the influence of the air, and to the exclusion of this fluid from deep-seated injuries or diseases. Nature provides a spontaneous remedy against the endosmosis or imbibition of infectious or contaminating agents existing in the air, by throwing out lymph, which, by coagulating, protects the exposed or injured point or surface; but the powers of life, as manifested by the capillary system, are not always adequate to this effect, and the consequences are the imbibition of septic matters, which contaminate the surrounding tissues, and the fluids taken up by the absorbing vessels, and occasion a spreading, or asthenic or diffusive inflammation of these vessels, of the lymphatic glands, and of the adjoining cellular tissue, the most manifest changes in the blood itself, and not infrequently extensive disorganization of remote organs and parts.

The changes thus arising in, and propagated from, the third channel of contamination, sometimes equally originate in, and are propagated from, deep-seated or internal parts, through the medium of circulating fluids and vessels, to distant situations, where they may be manifested only or chiefly. In the articles *Abscess*, *Absorption*, *Blood*, and *Disease*, in my work on *Practical Medicine*, I have fully shown the manner in which morbid secretions, or other depositions, may contaminate not only the adjoining tissues, but also the circulating fluids, and

ultimately occasion disorganization, and the formation of puriform or other morbid collections or lesions in distant organs or parts. I have so fully enlarged, in the places just indicated, on the views and doctrines which these consecutive lesions involve, that I need not allude to them at this place, more especially as they have been adopted by subsequent and recent writers; not always, however, with a due acknowledgment of the original sources.

It having thus been shown that the formation and perfection of the chyle and lymph-globules are probably owing to the vital influence of the vessels and glands through which they circulate, and that the metamorphosis of these globules to perfect red blood-globules is due to the functions of the glands not possessing excreting ducts and of the liver, it necessarily follows, that the absorption or passage of injurious, imperfectly assimilated, or other morbid matters into this fluid, must occasion disease in the organs more especially devoted to these functions; whilst impaired function of these organs, or structural lesions of them, must also impede or interrupt the progressive changes of these globules, and the formation of perfect blood-globules; the conditions of the blood itself becoming thus more or less imperfect or diseased, and incapable of undergoing in the lungs those changes which are requisite to the due nutrition of the frame and healthy condition of the several viscera.

What the exact conformation of the several globules existing in the chyle, lymph, and blood may be, is not perhaps yet fully determined, or at least admitted, by the numerous observers who have attempted to investigate the subject. But it may at least be inferred that these globules undergo a progressive state of organization, and that the organs already mentioned are instrumental in producing it. But it should likewise be considered, that the changes produced in the blood in the lungs and in the general circulation, as well as the influence of the air upon the blood, are also more or less intimately connected with the perfection of these globules, as well as with whatever alterations they may undergo subsequently to their full development. Neither microscopic nor speculative physiologists have shown the nature of the relation existing between the atmo-

spheric elements and the blood-globules and other constituents of the blood, so as to explain the phenomena of nutrition, and the sustentation of nervous or vital energy. Certain of the more manifest phenomena have been remarked, but not accurately traced or irrefragably demonstrated. It may be asserted that the oxygen of the air combines with the blood-globules, and gives rise to changes necessary to nutrition, to nervous endowment, and even to the circulation of the blood itself. But it is quite as difficult to disprove, as to prove, this proposition, with the subordinate relations, between these globules and the several general systems and special organs, which this proposition involves.

At the present day the chemical changes which occur in the blood have become subjects of discussion, and too generally with an entire neglect of those alterations which arise from the states of vital power. The former can seldom be recognised in practice, and are often unappreciable even in the most dangerous diseases; whilst the latter are generally the most manifest and characteristic, and present themselves in this manner to the unaided senses. To these latter, therefore, our attention should be directed, inasmuch as they indicate not merely the states of the blood itself, as respects its more important constituents, but also the conditions of organic nervous or vital power—conditions of the utmost importance to be correctly estimated by the physician. It should not, moreover, be overlooked, that even the most gross and evident chemical changes are merely the results of vital power and vascular action controlling the changes which are imputed to chemical affinities; but which are truly the results of a vital chemistry, or of affinities controlled by vital forces. Whatever may be the nature of the intimate chemical changes which take place in the blood, either in the lungs or in any other organ, there is every reason to assert that these changes would not result, if the organic nervous influence were removed from the organ in which they take place in health; and further, a close observation of the causation of the changes observed in the blood during disease leads me to infer, that most of those changes are more or less influenced or produced by conditions of

nervous energy or vital power, chemical action or affinity having nothing to do with the matter, further than in favouring the combinations of alkaline bases with oxygen, and of these or other compounds with acids; and those combinations even are favoured or controlled by the vital powers.

In speculating upon the changes taking place in the blood, the chief places are assigned, as agents, to the oxygen of the air, and to the carbonic acid or its constituents, as existing in the blood. What change, if any, may be affected by the nitrogen of the atmosphere is not ascertained. It is supposed that azote produces little or no alteration of the blood; yet it is not unlikely that, although the amount may not be appreciated or appreciable—at least there is no admission of appreciation by chemists—there is, nevertheless, a change produced by it both on the fluids which are carried into, and on the fluids which circulate in, the system.

[To be continued.]

CASES OF ANEURISM OF THE AORTA,

WITH REMARKS.

By CHARLES J. HARE, M.D. Cantab.

Physician to the St. Marylebone General Dispensary.

[Continued from page 668.]

Physical signs.—Bronchial respiration rather more extensive on the right side of chest anteriorly, and extends also lower down the sternum.—To continue the mixtures.

No very marked alteration took place in the symptoms for some time, his cough remaining much as before, and the dyspnoea only troubling him when he walked,—the breathing being easy when he remained quiet at home. He experienced some tightness about the upper border of the sternum, and as far down as the middle of that bone, but no pain in any part of the chest; he had no difficulty in swallowing fluids, and continued able to swallow solids by masticating them well. At one time his strength improved somewhat, but afterwards became manifestly less; and not being so well able as formerly to come to the dispensary, I attended him at home from the 12th of August. On

that day (the 12th) the physical signs, as regards the lungs, were much as before, except that the bronchial respiration was audible still more extensively than before, and the expiration especially had become more marked. The pulsation, which formerly existed in the first right intercostal space, and at right border of the sternum, could now scarcely be seen: there was but a very slight prominence in that part, and its base did not occupy a space above one-half as large as that which it formerly covered.

The cough having become somewhat more troublesome, the quantity of tincture of digitalis in the mixture (May 14th) was increased to ℥iiss., and tincture of opium, ℥ss. was added.

The following was the report for August 22d:—For ten days past he has been but little out of bed, owing to weakness and to the shortness of his breath. When he first rises he feels giddy, and is scarcely able to stand; after a while, however, he feels better, but is soon fatigued, and desirous to return to bed. When I first saw him he could not lie on the right side at all, and it was not until some time after the bleeding and blister that he was able to do so: now he can rest on either side, but is more comfortable on the left. He is thinner than before. There is no swelling or œdema of face, or of any of the extremities: intellect remains good. He sleeps pretty well at night for eight or nine hours, being awaked during that period only two or three times by his cough: sleep not disturbed by dreams. Has had no headache, and no giddiness, except, as already stated, on first rising from bed. The expression of his countenance is rather more anxious than before, yet not particularly so. Still continues very anæmic.

During the last four days has had for the first time a slight pain at the lower part of the chest anteriorly, coming on, however, only after fits of coughing, which occur perhaps five or six times in the twenty-four hours, and terminate in the expectoration of a small quantity of muco-puriform sputa, amounting only to ℥ss. or ℥j. in the night and day together. He has no pain in the upper part of his chest, the only other peculiar sensation he experiences being that of the expectoration proceeding from the right side

of the thorax near the aneurismal tumor. The voice is but very slightly hoarse, and neither it nor the cough have at all the same husky character which they formerly had. Has not had any palpitations; pulse 102, rather small, without any thrill or other peculiarity. The left carotid pulsates distinctly less strongly than the right. I am not certain that either pulse (at the wrist) is smaller than the other, but if there be any difference the left is the smaller. Less difficulty in deglutition; appetite good; bowels regular.

At dinner to-day he partook heartily of some soup and turnips, but without any beer or spirits. About two minutes after he had finished dinner, while he was in bed in a semi-recumbent posture, he suddenly exclaimed that he felt a very curious sensation, and was dizzy. His face felt hot; it became red, and perspiration stood in drops upon it, while the lips became almost blue. At the same time every object appeared to him to be upside down. This continued for about a minute and a half, but he did not lose his senses. The face remained red for about five minutes, after which it became deathly pale, and did not regain its natural appearance for at least ten minutes from the commencement of the attack. There was no headache either during or subsequent to it: previous to it he had not been exerting himself, and he could assign no cause for its coming on.

August 23d.—Quite recovered from the attack of yesterday, and has not had any return of it. The following are the physical signs observed to-day:—He is more emaciated, and the intercostal spaces consequently considerably more marked. On inspection, the only difference observable between the two sides of the chest is a very slight prominence of the sternal extremity of the right clavicle and first rib. There is none of the distinctly circumscribed, circular, and soft swelling which was so marked when I first saw the patient. On close examination, a slight pulsation can only just be seen close to the sternum, and between the first and second ribs. On deep inspiration the only difference in the motion of the two sides is that the left infra-clavian region rises somewhat more than the right one, so that at the height of inspiration the differ-

ence caused by the prominence of the end of the first rib of the right side is less marked than on expiration. The pulsation in the first intercostal space can be better felt than seen, but it can only be felt over a considerably smaller space (about a square inch), and very far less distinctly than before.

Percussion is duller from the middle of the sternum as far as an inch and a half to the right of it; and from its upper border and the clavicle as far down as to a level with the second rib, than in any other part of the chest—the point of this region where dullness is most intense being that where the pulsation is felt. There is no corresponding dullness over the left half of the sternum, or in the left infra-clavian region, where, indeed, percussion is clearer than in the mammary region. The middle and lower parts of the right side are duller than natural, though they do not yield so dead a sound as the inner part of the first intercostal space of the same side.

On applying the stethoscope over the seat of the aneurism, the pulsation communicated to the ear is far less strong than formerly, and gives the idea of a much thicker substance being interposed between the end of the instrument and the current of the blood than existed three or four months ago, while the head is not at all raised by the force of the pulsation, as it formerly was. Over this region both sounds of the heart are distinctly heard, of their natural duration, and in nearly equal intensity, but from this point towards the right side they gradually diminish in intensity until they become nearly inaudible at about two inches from the sternum. The apex of the heart pulsates in the same place as when he was first examined, but neither there nor over any other part of the heart is any morbid sound distinguishable.

Bronchial respiration is considerably louder than natural over the upper part of the sternum, and is exceedingly marked over that portion of its right side which is dullest on percussion: it is also audible over almost the whole of the right half of the chest, except its lowest part, where vesicular respiration is present; the bronchial character is very marked both in expiration and inspiration, and over the upper part of this side the duration of the former

is nearly as long as that of the latter. Respiration is puerile, and somewhat harsh in the upper part of the left lung, and not very audible in its lower part. Over both sides there are mucous rhonchi, most distinct, however, and most numerous, over the right side, especially its infra-clavian region, while they are less audible over the left infra-clavian region than in any other part of the chest. Vocal resonance is considerable below the right clavicle, and greater than under the left.

Posteriorly no pulsation can be felt on applying the hand over any part of the chest. Percussion rather duller over the upper half of the right than over the corresponding portion of the left lung, while the lower half of the left lung is considerably duller than its upper part, and at least equally so with the lower part of the right lung. In the right interscapular region bronchial respiration is louder than in the left one, and considerably louder, also, than natural; in this region (right interscapular) the first sound of the heart is audible, but not the second. In the left infra-scapular region there is much mucous rhonchus, the bubbles being in some spots very large.

From the above date the patient gradually got weaker, but no symptoms of importance occurred except that he had sometimes attacks of giddiness, from which he had been previously free, and about the 26th of August his left hand and arm began to swell, and gradually became very œdematous, pitting very readily on pressure, but not giving him any pain, or causing him to complain further than of the increased weight of that arm: a distinct hardness could be felt in the course of the vessels along the inner side of the humerus: this swelling continued up to the period of his death, while all other parts were free from œdema.

He had no hæmoptysis further than a slight streak or speck or two of blood, which might sometimes be observed amongst the sputa during the last two or three weeks before death: the expectoration was never very abundant, and at most amounted to from one to two ounces in the twenty-four hours, increasing somewhat before his death. No diarrhœa occurred during any part of his illness.

He continued the same medicines,

but on Sept. 9th I ordered him a quarter of a grain of morphia, to be taken daily at bed-time to procure him more rest, and to allay the cough, which had become troublesome.

He became materially worse on the 15th of September: on the 16th, the legs became cold higher up than the knees: he desired, however, to be assisted out of bed, and he then sat awhile on a chair, with his head resting on a pillow placed against the edge of a table. In this position he died without the least struggle.

Post-mortem Examination, 40 hours after death: the weather rainy, and rather cold.

The whole body much emaciated; the left arm apparently twice the size of the other, from œdema; there was also some, but only slight, œdema of the left ankle. No projection of the first right intercostal space near the sternum could be perceived, but on close inspection a slight prominence of the right side of the sternum, near the clavicle, and of the adjoining cartilage, was remarked. The chest was moderately covered with hair.

There was no rigor mortis.

On dividing the lower ribs on the left side, a quantity of puriform fluid escaped, which was afterwards found to have proceeded from a moderate-sized cavity of the left lung, which had thus been accidentally opened. The sternum and costal cartilages were adherent to the lungs on both sides, and on raising the former from below upwards the right mammary artery was found firmly united with the parietes of the aneurism, which was attached to the upper part of the sternum by very firm and dense adhesions, especially a little to the right of and below the tumor.

Right lung.—The pleura was very much thickened over the upper lobe, both anteriorly and posteriorly, and this portion of the lung had been displaced towards the right by the gradual increase of the aneurism; the lung was not adherent to the ribs laterally, but was very strongly so both by its anterior and posterior surfaces, all the adhesions being old; it was likewise united in a similar manner to the pericardium. The adhesions were such as to render it impossible to remove the lung without somewhat tearing its

substance, and thus an opening was made into a cavity at the lower part of the upper lobe, and from this a small quantity of puriform matter escaped. On cutting into the lung it was found to be almost full of tubercles in various stages, some of them having, in the upper and middle lobe, softened, and formed numerous cavities, but none of very large size. In the lower lobe there was much more of the vesicular structure remaining, though even here there were great numbers of crude tubercles. The substance of the lung (in the posterior and lateral part of the lower lobe), where free from tubercles, was of a much redder colour than natural, and broke down under pressure much too readily, though it did not present any granular appearance.

Left lung.—The pleura was thickened over the whole anterior surface of the left lung, and very much so over the posterior part of the apex, but not over the lateral portion of the lung, which was, however, united in every direction by strong adhesions, and, like the right one, was also adherent to the pericardium. There were some scattered tubercles, and clusters of them to about the size of a pea, in the upper lobe, more especially its anterior part; there was, however, a considerable quantity of vesicular structure, containing much frothy serum, and breaking down too easily under pressure: there were no cavities in this lobe. In the lower lobe the tubercles were much more numerous and further advanced than in the upper one, and, indeed, in most parts, it presented nothing but one mass of tuberculous induration, interspersed here and there with two or three cavities, from the size of a pea to that of a filbert, with one considerably larger (the size of a very large walnut) in the lower and lateral part of it; this was the cavity which was accidentally opened in cutting through the ribs of the left side.

There was much induration about the roots of the lungs, and the bronchial glands were excessively large, and quite black; several of them were tuberculated, and one, at least, contained a considerable deposit of calcareous matter.

The heart was rather larger than natural, but its walls were of proper thickness, and it did not appear to be softer than natural; on its surface

there were two small white patches, but it was not anywhere adherent to the pericardium. The lining membrane of the left ventricle was rather white, especially in the neighbourhood of the mitral valve, which was slightly more opaque, and perhaps a little thicker than natural, but quite smooth: the aortic valves were also less transparent than natural, but not at all rigid, except at the attachment of the posterior valve, where, under the lining membrane, there was a little cartilaginous deposit, not, however, producing any roughness of the surface. The right cavities of the heart presented no unusual appearance. The pericardium was healthy, and did not contain above a drachm of fluid.

The aorta was diseased both in its thoracic and abdominal divisions, presenting patches (varying in size from that of a split pea to a sixpence) both of cartilaginous and ossific deposits in each of these situations, but especially the former. Its ascending portion was nearly uniformly, and in a good deal dilated, (measuring 4 inches in circumference,) while the same was the case, but to a still greater extent, with the transverse portion, as this measured from $5\frac{1}{4}$ to 6 inches in circumference. From the superior surface of the arch, just at the part where the arteria innominata is given off, there arose a large aneurismal sac, almost globular in shape, being 3 inches in its greatest (vertical) diameter, and rather more than $2\frac{1}{2}$ in its shortest (antero-posterior) one; its parietes were formed partly by those of the aorta, and partly from those of the anterior part of the arteria innominata, at its point of union with the arch, so that the former vessel appeared to arise from the posterior and lower part of the aneurism.

The aneurism had caused the partial absorption of the posterior surface of the upper part of the sternum, to the depth of from $\frac{1}{4}$ th to $\frac{1}{2}$ th of an inch, and over an extent of about $1\frac{1}{2}$ inch square. At the right border of the sternum, between the first and second sterno-costal articulations, a portion of the bone was thus entirely removed, leaving a small horse-shoe shaped notch; around this spot the anterior surface of the bone presented a redder, more vascular appearance, than elsewhere, and the muscular fibres (of the pectoralis major) which were attached

to this surface were also of a deeper red colour than at any of the surrounding parts.

Superiorly the aneurism reached up to a level with the top of the sternum; posteriorly it had pressed considerably upon the œsophagus and trachea, so as to have somewhat flattened the latter, and rendered its anterior surface, over a space about the size of an almond, quite smooth, the cartilages there having become partially absorbed: posteriorly, also, but somewhat to the right, the aneurism had formed adhesions with the descending vena cava, while on the left side the common carotid and the subclavian arteries were forced too much outwards, especially the former, which had also its orifice of communication with the aorta considerably narrowed. Inferiorly, by its pressure, the aneurism had somewhat flattened the dilated arch of the aorta.

On making an incision perpendicularly through the aneurism, its walls, in most places, were found to be somewhat thicker than those of the aorta in a natural condition, but opposite to where the tumor had caused the absorption of the right border of the sternum, they were exceedingly thin, and where it was in contact with the rest of the sternum were scarcely traceable, so that it is probable the bone must have been, at some points at least, washed by the current of blood until the firm coagula were formed: these, in the upper part of the aneurism, were very nearly 2 inches in thickness, and though not so thick near the sternum, yet altogether were such that there was only a small space in the aneurismal tumor unoccupied by them: the coagula were arranged in distinct layers, denser and paler the nearer they were examined to the parietes of the sac, but at certain spots between these paler and denser layers there were patches less hard in consistency and of a darker colour—almost black—which much resembled the ordinary coagula of blood.

Besides this large aneurism, there was another (about the size of a walnut) in a very unusual situation, namely, at the under part of the arch, at its point of union with the descending portion of the aorta, and so placed as somewhat to depress the left bronchus, and at the same time

to press upon the left pneumogastric nerve and its recurrent branch—the inferior laryngeal nerve—as it curved round the aorta. There were likewise two small bulgings on the anterior surface of the arch, which would probably, in time, unless previously filled by coagula, have become aneurismal pouches.

The anterior and posterior mediastinal glands, but especially the latter, were exceedingly enlarged, as were also the œsophageal and cardiac glands, so that until these were dissected away it was impossible to see the relations of the aorta and other neighbouring parts.

The left subclavian, axillary, and brachial veins (the last-named being examined in the upper third of the arm only) were completely plugged up with dense, firm, fibrinous coagula, which were firmly adherent to the lining membrane of the vessel—the latter being itself of a bright red colour, evidently the result of inflammation. The arm, as already stated, was very œdematous, there being much serum in the cellular tissue, but no apparent deposit of lymph or pus there.

The mucous membrane of the larynx was pale in colour, but considerably thickened throughout, and on the left chorda vocalis there was a small well-defined ulcer, about 3-16ths of an inch long and half that in breadth, so placed that its long axis was in the same direction with that of the chorda.

The liver was enlarged, but its texture, colour, &c., were natural; the intestines were not examined throughout, but no ulcers were found in any part which was opened; there were none in the cœcum, and no external indication of any elsewhere; the kidneys were healthy.

[To be continued.]

APOTHECARIES' HALL.

NAMES of gentlemen who passed their examination in the Science and Practice of Medicine, and received certificates to practise, on Thursday, Oct. 14th, 1847.—Theodore Romney Willan, Corby, Lincolnshire.—Humphrey Sandwith, Hull.—Henry William Hayward Richardson, Chilmark.—William Beedzler Deacon, Market Depping.—William Parker Shipton, Aahbourne.

MISCELLANEA MEDICA.

By ROBERT DICK, M.D.

[Continued from page 337.]

13. *Some Details of Russian Diet.—Mushrooms.*—In England, only three species are used—the *Agaricus Compestris*, the *A. Pratensis*, and the *A. Georgii*; while, in other countries, as, for example, in Russia, twenty varieties are employed: in fact, none is rejected. There is a singular, and, if true, a not easily explicable allegation in regard to this fungus. It is that the *Agaricus Muscarius*, or fly-mushroom, always poisonous, or believed to be so in England, is freely used elsewhere, as in Kamschatka. This circumstance is not to be accounted for from the plant being cultivated in the one place, and grown and eaten wild in the other; the difficulty lies in the alleged fact that the wild and noxious fly-mushroom of England becomes innocently edible on simple transplantation to the north of Russia. A similar statement is made in regard to several varieties of *Agaricus* used in France and Italy, but found or believed to be hurtful here. An immense use is made of mushrooms in Russia, and the natives of that country wonder at our neglect of them. It may explain the impunity with which mushrooms are used in Russia, to state that they are abundantly salted in the first instance, and, after being boiled, are carefully squeezed.

The dietetic partialities of different nations are, in many instances, only explicable from habit and association. This is illustrated by the liking of the Russians for the liquor kvass, and the soup called Batinia.

The former is a thin, sour, yellow liquor, made from rye boiled in a large quantity of water, and fermented. It is used and relished by prince and peasant. It takes its place on the same tables with champagne. It is reckoned in that country such an indispensable of life, that, even in prisons, criminals are allowed an *ad libitum* use of it.

The soup Batinia is a medley of a large variety of animal and vegetable substances: the latter of the most acrid kind. Sturgeon sometimes, in a

decomposed condition, bitter cucumbers, with strong mustard, are some of the ingredients. In the centre of all, when about to be eaten, is placed a mass of ice!

The sterlet (*Sturio Ruthenus*) is a great favourite in Russia. For one, about the bulk of a good-sized salmon, £50 is sometimes given by wealthy persons. The third of that price is not uncommon. It is a white fish; its taste, something between the salmon and turbot. It is eaten with mushrooms and olives.

14. *Onions in dyspnoea caused by rarification of the atmosphere.*—At the mines of Potosi (in the Cordilleras), which are 13,000 feet above the sea-level, strangers suffer, during the first year of their residence, from a dyspnoic affection, called Puna, in the language of the country. For this, the natives universally recommend the use of onions. Endemic remedies of this kind are always worthy the attention of physicians.

15. *Beans as a strengthening aliment.*—It is usual for the copper miners, in Central Chile, to carry loads of ore of 200 pounds weight, up 80 perpendicular yards, twelve times a day! When they reach the mouth of the pit, they are in a state of apparent fearful exhaustion: covered with perspiration; their eyes almost starting from the sockets; the mouth open; the chest heaving. Yet after briefly resting themselves, they cheerfully descend anew.

Their breakfast consists of sixteen figs, and two small loaves of bread; their dinner, of boiled beans: their supper, of roasted wheat grain. They scarcely ever taste meat. The miners themselves would prefer to live on bread alone, without the beans: but as it is found that the latter qualify them for greater exertion, they are compelled to use them by their masters.

16. Vitruvius remarks, that, in his time, the average length of the human foot was one-sixth of the body: now, it is scarcely one-seventh.

17. *The Parliament of Paris versus tartar emetic.*—"Le parlement," Voltaire informs us, in a note to the second canto of the Pucelle, "defendit l'emetique. Louis XIV. fut guéri à Calais par l'emetique, et l'arrêt du parlement perdit son credit." If I remember rightly, however, it was by

the diaphoretic, not the emetic use of potassio-tartrate of antimony that Louis was cured. His disease was, I think, either rubeola or scarlatina.

18. *Note in regard to digestion.*—The taking of a dram (as it is called) of brandy, whiskey, &c. after or during dinner,—the use of strong drinks generally at or after meals,—tend to retard digestion by impregnating the alimentary mass with liquids, which oppose decomposition, and which present additional obstacles to the reduct action of the stomachic secretions. The use of such drinks is, perhaps, only justifiable (dietetically considered) when the digestive organs are too debilitated to hinder acetous action in the alimentary ingesta.

19. *Anthropophagiam.*—It is not commonly known that this revolting practice was almost universal in Egypt, so late as the thirteenth century! During a scarcity the poor began to eat human flesh. This at first caused general horror, which, however, gradually subsided, until the rich and titled classes began also to make use of human flesh, and the fashion spread throughout all Egypt. The most criminal means were used to entrap victims. Among others, physicians were frequently sent for under the pretence of visiting sick persons, and were murdered. Abd-Allatif, a physician of Bagdad, who relates these facts, was personally acquainted with three physicians who were thus decoyed.

20. *Bignonia Chica.*—This plant, a native of New Granada, is mentioned by Bonpland and Humboldt as an excellent diuretic. Perhaps some of the readers of this journal, who have been in that quarter of the South American continent, would furnish some details about it.

21. *Vegetable diet.*—The following facts are strongly confirmatory of the statements in number six of these miscellaneous notes:—"Having witnessed the robust activity of the people of this country (Northern Persia and Afghanistan), I am induced to think that the human body may sustain the most laborious services without the aid of animal food. The Afghan, whose sole aliment is bread, curdled milk and water, inhabiting a climate which often produces, in one day, extreme heat and cold, shall undergo as much

fatigue, and exert as much strength, as the porter of London, who copiously feeds on flesh, meat, and ale: nor is he subject to the like acute and obstinate disorders. "It is a well-known fact that the Arabs of the Red Sea, who live, with little exception, on dates and lemons, carry burdens of such extraordinary magnitude, that its specific mention to an European would seem romance." — *Forster's Travels*, ii. 142 3.

22.—*Inferences deducible from the mouth of man as to the degree in which it was intended he should be a flesh-feeder, or if it was intended he should be a flesh-feeder at all.*—It is the writer's intention to examine the above question in more detail on future occasions, but meantime he submits to the reader's reflection the following considerations:—

The mouth of the human adult is furnished usually with thirty-two teeth, the half of that number being fixed in the upper, the other half in the lower jaw. The four front teeth in either jaw are incisors, adapted equally for vegetable and animal food—not less for the former than the latter. From these, then, no comparative conclusions can be drawn as to the point *sub lite*. We shall therefore pass to the canine, or cuspidated teeth, in number four, two in each jaw, and placed next behind the incisors. In man there is the slightest possible ground for describing these incisors as *fangs*; they project to the smallest possible extent, if to any, beyond the incisors and molars. Hence any inferences deducible from the size and position of the human cuspidati alone, as to man being designed for a flesh-feeding animal, amount, if not to nothing, at least to next to nothing. But even that small presumptive proof is greatly lessened, if not destroyed, by several other considerations. If we consider the various nature of man's *vegetable* food, more especially those articles of it consisting of drupaceous, pomaceous, cucurbitaceous, and some other fruits, and of many roots, it will be seen that the cuspidated teeth are just as necessary and as useful for penetrating and breaking off morsels from these as for tearing off portions from a mass of flesh! When I eat an apple, I make much more use of my cuspidati, and find them much more necessary and

useful, than when I discuss a beef-steak. If, moreover, we allow any weight to the argument that nature (by which I ever wish to be understood as meaning the Author of nature) had, in our structure, prospective regard to those habits, inventions, and modes of life, to which our intelligence and reason were fitted to give rise, and have actually developed; if the invention and use of *bread*, which, in one form or another, is almost universal in the race, should be allowed to have been contemplated—bread, a concrete and often tough mass of dried farinaceous paste—then might we well say that the cuspidati were not less obviously designed for the convenient mastication of such aliment than for that of animal food! It never can be contended that man was meant to *prey violently* on living animals; first to kill by biting them, and then to tear morsels of flesh from them through the hairy or feathered hide that still covered the muscles. For this, the long cuspidati and powerful jaws of truly carnivorous animals are designed; but, as I have observed, man was obviously never intended for thus obtaining, or thus using the bodies of animals. Yet (and this is what I contend for) for any other use of flesh, the human cuspidati, so insignificantly developed, seem not more designed than for the mastication of many kinds of vegetable diet.

The molar teeth being, like the incisors, equally adapted for the mastication of vegetable and animal food, like these, furnish no argument, one way or another, in the decision of this question. As regards, then, the propriety of using animal food, the whole question hinges, so far as respects the indications of the human mouth, on the extremely slightly produced cuspidati.

It may, however, be alleged that no provision is found in nature without an intention, and that since man *does* unquestionably possess cuspidati, there can be no doubt that he was intended to be a carnivorous animal to at least *some* extent, though possibly not to the degree in which sometimes he is.

In answer to the first part of this argument, namely, that no provision is ever found in nature without an intention of use, I might point to the male *mammæ*, and puzzle the objector with a request to name the design of these.

I might also instance those hard warts developed on the hind quarters of the equine and bovine genera, for which no object, assignable at least by human ingenuity, can be found. But supposing I concede the point that man is unquestionably designed to be, in part at least, carnivorous, may not that admission be coupled with some considerations and suggestions which tend to show that he is not intended to be *essentially* and *permanently* an animal-destroying and flesh-eating creature? This whole question is, I need not say, environed with real difficulties, as well as with many prejudices, which, however, must be respected. It is, moreover, evident that no power or subtlety of human reason can rid it of much impenetrable and, in some respects, painful mystery. Still, I apprehend that certain views may be taken which, in some degree, modify its gloom and its difficulty.

I decline introducing any arguments *pro* or *con* on this question from Scripture, on various accounts. By some, I need not say, Scripture is not owned as an authority, and, however we may differ from them on that point, as they have a right to their opinion, we must forego as *grounds of argument* subjects on which we and they do not agree, and meet them on those on which we do. But further: recent discovery and extended information have shewn that even the most confident interpretations by our forefathers of the Mosaic account of creation were incorrect. It was imagined till lately that this world had an existence of only a few thousand years back, and that death in the animal kingdom was first introduced by that fall of man of which an account is given in the first book of the Pentateuch, and that death was a penal consequence of that fall. Now, however, men, and even clergymen the most pious and orthodox, hold and announce very different opinions. It is only necessary to instance, in proof, the Rev. Dr. Pye Smith—a man distinguished at once for his sanctity, and for his able works both in theology and geology. He not only admits (what, indeed, cannot be questioned) that this world had an existence incalculably more remote than was once *supposed* to be assigned to it by the Mosaic narrative (no doubt from our misapprehending that narrative), but he also

owns the equally undeniable fact (as shewn by the fossil remains of many antediluvian carnivori) that death in the animal kingdom prevailed in this globe long anterior to the periods of either Adam or Moses, and therefore could not be an effect of the fall. That a contrary view, indeed, should ever have been taken, appeared surprising to the writer even in his most juvenile years, and long prior to his knowledge of geological researches. Either beasts of prey were formed in Eden, such as we now see them, with fangs, claws, and an internal structure fitted to digest the flesh of other animals slain by violence (all which were unnecessary if death was not primarily intended to prevail in the world), or, on the other hand, lions, eagles, &c. were created *without* fangs, claws, beaks, talons, and internal viscera, fitted, the former for seizing, the latter for digesting prey. Then, besides that they must have been totally different animals from what we now see them, it is necessary further to suppose that at the moment of the fall a total change took place in their whole organization: teeth, claws, beaks, talons, must have sprouted, and the internal organs undergone equally new and sudden adaptations. But to resume. The views of Dr. Pye Smith (no ways new) are cited to show that as conclusions founded on what is supposed to be the meaning of Scripture are sometimes more bold than true, it is better, on occasions which admit of it, to argue questions on independent grounds, and on those common to the opposing disputants and to all scientific men.

We now waive entirely that part of the question which regards whether man is best supported on a vegetable or on an animal diet respectively, or on a mixture. Perhaps the experiment has never been tried sufficiently largely or systematically to decide the question; perhaps, also, the effects, individual and national, of these respective diets, have never been carefully and scientifically traced and studied. So far, however, as our present means of judging in the matter, permit or enable us, it seems that, on either diet, even when exclusively employed, life may be supported in full health and vigour (See Nos. 6 and 20), but it is unquestionable that a vegetable diet is of the two, when ex-

clusively employed, far the safer and better in the majority of the circumstances in which individuals and nations are placed.

Waiving, we repeat, the question referred to in the preceding paragraph, we propose simply to submit one or two considerations (which we have not met with elsewhere) calculated, we think, to make it at least doubtful that man is intended to be essentially and permanently carnivorous, and furnishing an explanation of his possessing cuspidati.

It cannot be denied that the slaughter and dietetic use of animals, so nearly allied to us, in many respects, as oxen, sheep, &c. is a proceeding naturally revolting to man, and to which he is only reconciled by use, example, and the belief that it is not only innocent and sanctioned by the Deity, but even recommended by Him. (See Genesis, ix. 3.) That it is, when not countenanced by these considerations, repugnant to human feeling and sympathy, is evinced by the practice, though superstitious, of the highest castes of the Hindoos, by the example of Pythagoras and his followers, and many other ancient and modern instances.

We may explain the presence of cuspidati in man thus:—for reasons altogether inscrutable, the Deity has set animals to prey upon each other—one of the most painful, perplexing, and stumbling mysteries in the whole of nature. Man, also, would appear, from the presence of cuspidati, to be intended, partially at least, by his Maker to live by the death of his fellow creatures. But the Deity has himself added striking distinctions between carnivorous man and carnivorous brutes. Man *can* subsist, and subsist exclusively, on vegetable food. They *can not*. Man is endowed with sentiments of pity and sympathy for the often helpless and unoffending animals which he sacrifices. Carnivorous brutes are wanting, I need not remark, in all such feelings. Is it not then legitimate to conjecture that the presence of cuspidati proves merely that man was intended to be carnivorous in certain circumstances only, and in a certain stage of his own civilisation, and his conquest of the earth? Those parts of the earth which are not yet held by man, or

only by man in a savage state, are tenanted not only by harmless but by fierce animals, whose presence is incompatible with that of human beings. Now, savages, destitute of agriculture, and moreover compelled by an appointed necessity to destroy these animals, may have no option but to subsist on their bodies. It may even be legitimate for him, in the above circumstances, to destroy harmless animals also, until the surface of the earth is cleared of both wild and tame, for his own safe occupation and undisturbed culture. *This is the stage in man's history*, in which it may be conceived the destruction of animals and the employment of animal food is legitimate: this the stage for which, and which *alone*, the *cuspidati* were intended. This stage past, man, we may conceive, was designed to become altogether agricultural, and entirely a vegetable feeder. I am of opinion that this view reconciles many difficulties. It accounts for man's having *cuspidati* at all. It explains why he has them of so slight a development: since (on the theory proposed) intended for only occasional or temporary use.

I cannot bring myself to believe that the Deity intended man to *keep up a succession* of victims for slaughter. It is credible, and was even, if you will, expedient that man should kill, and, since killed, should eat the animals, whether ferocious or mild, which prevented his occupation and cultivation of the soil. But this being accomplished, he was not, I conceive, and is not authorised to *rear*, around him, *continuous materials* for carnivorous indulgence. Where man is undisputed master of the soil, he ought, I apprehend, to become purely agricultural, and retain animals only from humane curiosity and enjoyment, as amusing and affectionate companions, or as useful assistants. Noxious animals, as lions, serpents, &c. will gradually become extinct, and are intended to become so. They are only designed to occupy earth in *anticipation* of man. Man is under no obligation to preserve *these* races: nor, I maintain, is he under any to retain even the harmless kinds, as horses, oxen, sheep, except for the benevolent ends just referred to; certainly not to rear animals in far greater numbers than nature, left to herself, would do—thus

multiplying life only in order to destroy it.

The implanting by the Deity in man's nature sentiments of humanity and pity for brutes, and the qualifying him to live wholly on vegetable food, may well be regarded as furnishing counter-grounds of argument to those founded on the *cuspidati*, as to man's being intended to be permanently carnivorous, and as very much modifying the inferences to be drawn from these. The savage has no sentiment of pity, for these would be only inconvenient and discrepant in his situation; *compelled* as he is to eat the animals he may slay in self-defence or from hunger. But, in the case of the civilised man, it is remarkable that these humane sentiments develop themselves just when he is enabled, by agriculture, to act upon and indulge them. Thus our Maker, while He has designed us for carnivori in certain circumstances, has not left us without strong intimations addressed to our moral nature, that He has not intended us *always* to be so.

I shall briefly add two most important considerations which seem indirectly to favour the theory now submitted—namely, that animals are not intended to be *kept up* by man, but to *give place* to human beings.

First. The earth would support a vastly greater number of human beings, were men exclusively vegetable feeders. And,

Secondly. The object of nature, in making *personal, bodily*, labour essential to man's physical and moral health, will not be defeated, as it would be, could the short-sighted aims of some men, calling themselves philosophers and economists, be attained, and were brute or machinal labour wholly to supplant human. Nature's irrevocable decree is, that to be healthy, *man must work* or find a substitute for work, in exercises of pleasure or duty. It was assuredly never intended by nature that man should devolve on brutes and machines, that bodily toil which is essential to his own well-being. We know how either imperfect or pernicious are usually the modes of exercise resorted to by the unfortunate wealthy to replace that useful labour which necessity imposes on the poor.

In proportion, we believe, as man understands his own nature and des-

tiny, it will be found that no species of exercise, which, though intended to replace useful and necessary labour, has *pleasure* for its object, permanently answers its end. Even travelling, the most innocent substitute, tires. Sporting (aptly so named, consisting, as it does, in man's *pastime* in what is agony and death to brutes), furnishes a violent but a temporary excitement: and so, I believe, it will be found of all labour not imposed by duty or necessity.

Yes! let us misinterpret, as we may, the arrangements of the Deity, they will ever be found the wisest and the best. "The sleep," says Scripture, "of the labouring man is sweet, whether he eat little or much." The labouring classes are in reality the favourites of nature: the evil of their lot is not *labour*, but labour not *adequately requited* in consequence of selfish or ignorant legislation; in consequence, in other words, of misarrangements of man, not of the Deity.

The necessary gradual disuse of animal food, either from humanity or necessity, is not a fanciful and merely speculative view. Already in China the almost total extinction of several important classes of animals, plentiful among us, is witnessed. In that country, cattle and sheep are extremely rare—so are horses, and even asses. The simple reasons for this are, that the animals named throw men out of labour, and consume food which might support human beings.

Bentlnck Street, Manchester Square.

THE SCOTCH EPIDEMIC FEVER, OF 1843-4.

By JOHN RICHARD WARDELL, M.D. Ed.

Late President of the Royal Physical and
Hunterian Medical Societies,
Edinburgh; &c. &c.

[Continued from p. 673.]

LASTLY, CONCLUSIVE REMARKS.—Previous to the termination of these papers, there are some considerations, perhaps, to which a brief advertence might not inappropriately be made. From what has been said in the foregoing pages, it must be granted, on the part of the reader, that the affection which it has been attempted to describe possessed

characteristics of a truly novel description; and those distinguishing features were such as to render it positively unlike any epidemic that has hitherto prevailed in these islands. The mode of invasion,—the kind of *maeulæ*,—the great proportion of jaundiced cases,—the well-nigh, if not invariable, occurrence of relapse,—the unusually quick pulse, unaccompanied with a commensurate degree of severity of other symptoms, as observed in forms of fever with which we are more familiar,—the constant abortions or premature deliveries which it produced in pregnant women,—the spontaneous resolution at an early period effected by a powerful diaphoresis, which fully and unequivocally, in a short space of time, terminated the febrile paroxysm,—together with other peculiarities previously mentioned, showed the distemper to be anomalous, and without precedent. Conceding, then, that it did in its manifest characteristics broadly differ from the affection commonly termed typhus, it follows also, as a rational inference, that the first causes must also have essentially varied, or, in other words, that the two forms were produced from poisons possessing dissimilar and distinctive qualities, because, as remarked, their cognisable effects were unlike. And it is from the effects alone that we are enabled to judge of many natural agents, and much more so, when such agents are of so subtle a nature as to elude the acutest and most refined modes of inquiry as to their ultimate properties; and because the system, after having passed through this fever, was quite as susceptible of contracting the ordinary typhus. Almost all agree that the poisons giving rise to the exanthems could never, under any modification of external influences or personal peculiarities, produce typhus; and *vice versa*. It is true that a case of malignant small-pox may assume a typhoid form.—at least, a state which nosologists please to designate under that appellation (by way of perspicuity, and in order to obviate misconceptions, the condition now spoken of might more happily be recognised under some other term; for the want of succinct and clear definitions in medical phraseology, by confusing the meanings intended to be conveyed, is not only in itself an evil, but may

cause a greater error in practice),—yet such would not be idiopathic typhus, because the phlegmasiæ will occasionally run on to the same state, and because the poison, if contracted, would not give rise to typhus, but varidous fever. A patient very recently came under the writer's notice who had scarlatina, and during convalescence became exposed to the infection of typhus, which she contracted, and passed through the course of that disease in its ordinary form, as if the one affection produced its phenomena in the system quite irrespective of the other. Some author of eminence, when discussing this point, and contending for the oneness of cause of all denominations of fever, asserts that he has known an exanthematic fever produce typhus. An isolated case is quite insufficient to form the base of a doctrine so important; and it is highly probable that in this single instance there were means whereby the true typhoid poison might be communicated, although they were not discovered: and it is much more conclusive as to the truth of the opposite doctrine, when innumerable cases might be cited in its support. Those authors who have contested for the fundamental identity of all descriptions of fever—that is, of their origin from one poison—have done so rather by rearing their theories on hypothetical assertions, than founding their doctrines on the unassailable basis of facts. It is this kind of argumentation which impedes the progress of science, by encumbering her path with vague and speculative notions, instead of rigidly appealing to facts, and taking the data of impartial observation for our guide. External influences, and the idiosyncrasies of the patient, it is true, will always cause some degree of modification: they may exert an influence on the development of symptoms, and predispose to this or that complication; but they cannot alter the essential nature of the disease; and, when a generalization is made from a considerable number of cases of fever, it will always be found that there are cardinal and characteristic symptoms distinguishing the type of the fever, however sometimes masked or rendered apparently different, from the operation of such influences, and particular

conditions of the body. It would be exceedingly difficult—nay, impossible—to construct a nosological nomenclature to embrace all hues and degrees which, under varied circumstances, diseases are liable to assume; and therefore the classifications of disease particularly apply to general facts, comprehending the most marked and representative symptoms. Cullen erred by endeavouring too much at minuteness and perfection in his system, and sometimes by making facts bend to his preconceived theories. Gregory, Bateman, Perceval, Armstrong, and others, have objected to this great nosologist's subdivision of continued fevers, from the conviction that they are not met with in distinctive forms; and the former asserted that, during an extensive practice of thirty years, he never met with a pure case of synocha,—a statement, however, which was perhaps going too far, as we do occasionally meet with affections of a febrile character bearing a very near, if not a positive, resemblance to the species of fever enumerated under that head by Cullen, and which that great observer must have taken as his standard. By the general acceptance of the term typhus, we recognise a disease which manifests as a predominant feature debility, accompanied by considerable impairment of the sensorial functions, vitiation of the secretions, rapid diminution of the solids, &c.: hence, to designate fevers of a simple and uncomplicated form by that more grave appellation, would not only be a nosological inconsistency, but calculated to lead to mischievous results. Some physicians have believed that the only real difference in fevers of the continued form is in the degree of intensity of their symptoms,—a doctrine which, if reflected upon, is untenable, because some fevers run a mild course throughout the period of the epidemic visitation, with scarcely any tendency to institute inflammatory complications, whilst in another visitation the type may be far more malignant, and local affections exceedingly common, doubtless depending upon the essential qualities of the specific poison, because one set of organs may at one time be little, if at all, affected, which at another will be almost invariably diseased, and because the many facts given during the time of the seven days'

fever, and which have been detailed in these papers, incontrovertibly give proof of the contrary. Throughout the interminable field of nature we see variation to infinitude, different laws, contrivances, and constructions,—differences in the adaptation of means to ends,—differences that point out the most obvious distinctions; nor can it be matter of surprise that there are differences in disease,—that affections may, superficially reviewed, resemble one another, yet be radically dissimilar, and that the causes be as various as the symptoms disagree. In the fever now treated of, although it was of the continued kind, it could not with correctness be said that its characteristic diagnostic marks placed it under the class of synochus or typhus, nor did it coincide with our notions of synocha. What, it might be asked, could be more conclusive of the *ex prima causa* disagreement of the two forms of fever now spoken of—viz. the common typhus and the seven days' fever, than that within a short space of time, occasionally even during convalescence of the one succeeding the other; both forms existing simultaneously in the same locality,—nay, in the same house, and the same family,—that the most obvious and distinctive characters broadly distinguished them,—never rendering it a matter of doubt as to their identity,—that they never became inextricably blended,—that even nurses and non-professional people could often say which was a case of short fever, and which was typhus,—and that most, if not all, of those cardinal symptoms by which nosologists designate typhus, was wanting in the new distemper, and unequivocally apparent in the disease with which we are more familiar? It has generally been regarded as, and appears to be, a law in the animal economy, that external agents which, when first taken into the system, produce considerable effect, lose their power by repetition, either by the system, after having been preternaturally excited by such agents, becoming less susceptible of their power, or by better accommodating itself to those agents—a fact which we know to be substantiated by the exhibition of medicines: and thus it is with regard to the specific poisons giving rise to the various forms of febrile diseases; after having exerted their power, the body, for a

shorter or longer period, has little or no tendency to receive the agent, or re-institute that morbid action which constitutes its repellent efforts: in typhus the immunity is considered to last for several weeks or months; in the exanthema during the remainder of life. It is undoubtedly on this general principle that vaccination renders milder, or averts a disease, which, if it be not identical, may be presumed as very analogous. If the nosological classifications of diseases could be founded more upon the radical pathology than they have hitherto been, or, in other words, were the classes arranged more with reference to the causes of symptoms than the symptoms themselves, the conclusions would, in a theoretical point of view, be more philosophical, and in practice more certain and correct; but, as previously remarked, it is the want of this precise information which has given rise to many apparent and real discrepancies amidst those who are accounted standard authorities. When we see certain organs the seat of lesion in one febrile attack affected, in another scarcely or not at all complicated, when the pathological distinctions during the progress of the malady differ, we of course conclude that their causes must vary. Visceral complications in typhus some have endeavoured to account for as mainly dependent upon casual circumstances, and there is little doubt that previous disease in an organ or organs would, under the general disturbance of fever—which, it must be remembered, powerfully predisposes to the inflammatory state—have a great proclivity to assume true inflammation; but when a general review is taken of hundreds of cases, and a common proneness is observed towards the development of peculiar to particular symptoms, we are obliged to attribute such to qualities in the essence of the fevers, and thus admit that their first causes may be unlike. It might be advanced that two attacks of acknowledged typhus may present so much apparent diversity in their symptoms—not merely in degree of intensity of such symptoms, but as if in their ultimate nature—as to appear positively diverse, yet upon a careful summing up of facts, there would be certain residuary symptoms arguing unanswerably as to the oneness of their

cause, and assuring as to their real identity: in other forms of disease the degrees of intensity of symptoms would almost impress us with a belief of their being two and opposite diseases—that is, if superficially considered. In recapitulation of what has been said, and in order to supply certain facts corroborative of the doctrine maintained, the following propositions may be advanced, viz.:—1st, *What were the proofs supplied by this epidemic that all varieties of fever do not proceed from one cause, but are produced by different specific poisons?* 2dly, *What were the distinguishing diversities between the epidemic and typhus?*

1. Bateman, Southwood Smith, Marsh, and others, as well as the Brunonians, contend for the identity of cause of all denominations of fever, but without supplying sufficient data to give irrefragable testimony to their doctrine. To accede to the position maintained by these authors would be inconsistent with what we know of innumerable authenticated facts. Previous to the occurrence of the epidemic which has formed the subject of those papers, there was perhaps more room for disputation relative to the question, it must be allowed; but since that febrile attack the point appears conclusive, and whatever other practical information may have been gained by those who studied the phenomena of that fever, it seemed undeniable that continued fevers are not identical in their essence, that is that they have their origins in different causes, or specific poisons. It is no more inconsistent to think that there are various specific poisons giving rise to diverse forms of continued fever, than that the poisons producing these, and those causing the exanthema, should be different, and it has only been from the want of conclusive evidence to establish the doctrine of non-identity that the hitherto most generally received etiological reasonings have been erroneous. If fevers proceeded from one poison, the dissimilarity of types, often constituting important pathological features, would be difficult to account for, on the notion of extraneous influences; there would be more sameness in their phenomena, nor would the often oppositeness of characters be so apparent. When small-pox, scarlatina, or measles, prevail epidemi-

cally, cases of typhus are then more rare, or wholly absent, and *vice versa*, one or other of these distempers may prevail, decline, and be succeeded by another, but they seldom, in the same locality, rage simultaneously; as if it were a law amongst infectious diseases that only one should occupy the field at a time. During the height of the epidemic visitation there were scarcely any cases of typhus in the wards of the Edinburgh and Glasgow hospitals, whilst small-pox, scarlet fever, &c. were well nigh entirely absent, fully maintaining the assertions now advanced. As the seven days' fever declined, typhus increased. In January 1844, out of 450 cases of fever in the Edinburgh hospitals, there were only 24, or 1 in 18.75 of typhus, but about four months later, when the seven days' fever was on the decline, the proportion of typhus cases was far greater, for, as seen by the following Table, out of 159 cases of fever, then in the various establishments, 65 of that number were undisputed typhus, being 1 in 2.44 instead of 1 in 18.75; and on the 1st of June the total of epidemic cases had decreased to 33, whilst the typhus cases were 59: thus the latter being almost double the former.—(See Table next page.)

Out of the number of patients given in this table it is seen that in 12 instances the epidemic had been succeeded by typhus, and four of typhus succeeded by the epidemic. Dr. Henderson became fully convinced of the non-identity of the forms, and paid special attention to the investigation of this interesting point. From February to September he saw but 39 cases of typhus; the histories of 29 of which were carefully taken, and in four only out of the whole number was there any doubt as to the infection being derived from patients having the seven days' fever. Upon full inquiry relative to these four doubtful cases, it was proved that previous to their illness they had been where the measles typhus prevailed, or there were such circumstances connected with their previous history as to render it probable that they might have contracted the disease. One instance, and which Dr. Henderson quotes, I well remember, and was in the person of a night-nurse who came from the country, and acted in that capacity in Ward No. 13,

in which there were no patients except those labouring under the epidemic. This woman, however, took typhus, a circumstance which at first seemed to militate against the notions of essential dissimilarity which, amongst certain parties, were now en-

tertained. Upon inquiry it was discovered that a short time before becoming indisposed she had washed the linen of a patient belonging to another ward, who had died of malignant typhus, and thus the apparent anomaly was satisfactorily explained away.

TABLE No. IX.

This table shows the exact number of epidemic and typhus cases in the various establishments on the 15th of April, 1844; also the number and manner in which the two forms of fever succeeded each other.

IN THE VARIOUS WARDS OF THE EDINBURGH ROYAL INFIRMARY.

Wards.	Males.	Females.	Typhus.	Epidemic.	Epidemic Cases succeeded by Typhus.	Typhus Cases succeeded by Epidemic.
No. 2	Males	—	8	7	2	—
" 3	do.	—	6	9	1	1
" 5	do.	—	1	10	—	—
" 7	—	Females	—	10	—	—
" 8	Males	—	—	5	—	—
" 9	do.	—	2	—	—	—
" 12	—	Females	6	7	1	—
" 16	—	do.	8	5	2	1

Fever-house A.
Wards.

IN THE EXTRA FEVER HOSPITALS.

No. 1	Males	—	3	4	—	—
" 2	do.	—	8	5	—	—
" 3	—	Females	1	1	—	—
" 4	—	do.	2	4	1	—
Fever-house D	—	do.	20	27	5	2
			65	94	12	4

Males 68

Females 91

Total 159

The remaining three cases were also fully accounted for. There was one family the members of which had both fevers, and as this illustration forms one of the best examples of what it is now endeavoured to prove, the particulars may here be concisely detailed. This was in the family of a Joseph Dempster, 32 College Wynd, Edinburgh.

1. Ann Dempster, (daughter) æt. 14, began in epidemic Dec. 13th, and was dismissed 26th, 1843; April 20th, admitted with typhus, and dismissed May 15th, 1844.

2. Joseph Dempster, (father) æt. 52, began in December 27th, 1843, with epidemic; dismissed at the end of three weeks, remained out six days, when he relapsed, when he was re-admitted, and at the expiration of other three weeks was finally discharged. April 28th,

was again admitted with exanthematic typhus, and dismissed May 17th, 1844.

3. Jane Dempster, (wife) began in epidemic January 2d, discharged on 27th, remained out three days, was re-admitted with typhus, and finally dismissed March 31st, 1844.

4. Elizabeth Dempster, (daughter) æt. 23, had epidemic in January, 1844; remained in hospital three weeks.

5. Jane Dempster, (daughter) æt. 7, admitted with epidemic January 7th, dismissed the 23d. March 10th again admitted, having now typhus; discharged April 8th, 1844.

6. Joseph Dempster, (son) æt. 18, admitted with epidemic January 20th, 1844, and remained in hospital five weeks.

7. James Dempster, (son) æt. 8, admitted in epidemic February 12th, discharged March 10th; re-admitted April 24th with typhus, and discharged May 14th, 1844.

8. Maxwell Dempster, (son) æt. 3, had epidemic in February; April 16th, commenced in typhus, from which he

became convalescent after three weeks.

Referring to the above, it will be seen that each of the individuals had the epidemic, and that six out of the eight had typhus. The longest period

of intervention (in the instance of Ann Dempster) was seventeen weeks; in the case of Jane Dempster, (the mother) but three days. In order to have more extensive data on this point, the annexed table was compiled.

TABLE No. X.

Which shows how the fevers succeeded each other in a short space of time.

No.	Name.	Age.	Male.	Female.	Date of attack of Epidemic.	Period of intervention between the two attacks.		Date of attack of Typhus.
						Weeks.	Days.	
1	A. D.	14		Female	Dec. 13, 1843	18	3	April 20, 1844
*2	J. D.	52	Male		Jan. 23, 1844	13	5	" 28, "
3	J. D.	48		Female	" 2 "	4		Jan. 30, "
4	T. D.	7		"	" 7 "	9		March 10, "
5	J. D.	8	Male		Feb. 12, "	10	2	April 24, "
6	M. D.	3	"		" 4, "	10	2	" 16, "
7	A. W.	28		Female	March 6, "	8	5	May 6, "
8	J. W.	45	Male		Feb. 1, "	9	3	April 7, "
9	E. M.	22		Female	March 16, "	9	4	May 22, "
10	M. H.	25		"	Nov. 4, 1843	7	5	Dec. 28, 1843
11	J. A.	20		"	" 10, "	24	1	April 26, 1844
12	A. M.	16		"	Dec. 20, "	17	2	" 29, "
†13	J. F.	44		"	Feb. 1, 1844			
†14	E. F.	23		"	April 13, "	5	2	May 20, "
15	J. F.	32		"	Feb. 20, "	5	2	March 28, "
16	E. M.	32		"	" 10, "	5	1	" 16, "
17	C. D.	31		"	" 1, "	9	3	April 17, "
18	M. J.	4		"	Jan. 24, "	15		May 8, "
19	E. C.	10		"	" 16, "	10	2	March 28, "
20	J. D.	27		"	Sept. 10, 1843	34	1	May 6, "
21	T. K.	13		"	Feb. 7, 1844	12	2	" 3, "
22	M. R.	17		"	Aug. 11, 1843	38	1	" 4, "
23	H. M.		Male		Nov. 17, "	20	5	April 10, "
24	H. W.	20		Female	Feb. 6, 1844	16		May 28, "
25	H. D.	6		"	Oct. 11, 1843	32	3	" 25, "
26	D. N.	18	Male		March 3, 1844	9	3	" 18, "
27	M. D.			Female	" 17, "	11	5	June 7, "
28	M. C.	29		"	Jan. 10, "	19	2	" 13, "
29	G. B.	28		"	Oct. 9, 1843	32	3	May 23, "
30	J. D.	21		"	April 1, 1844	7	3	" 23, "
31	H. W.			"	Dec. 25, 1843	22	6	" 23, "
32	M. G.	10		"	Oct. 3, "	34		" 28, "

From the above table the following particulars are deducible, viz. :—

1 case where typhus manifested itself within	1 month.
6 cases	2 months.
10	3 "
4	4 "
3	5 "
2	6 "
1 case	7 "
4 cases	9 "
1 case	10 "

One half before 3 months, and two-thirds before 5 months.

This table, which gives the exact dates respecting the time of attack, period of intervention, &c., of thirty-two cases, proves that such was not merely a casual occurrence; and if it had been deemed requisite, a far greater

* This patient was twice admitted into the Hospital with distinct attacks of the epidemic previous to her having the typhus.

† Began in typhus before leaving the Wards. ‡

‡ Began in typhus before leaving the Wards. §

§ Began in typhus before leaving the Wards. ||

number, in illustration of this fact, could have been supplied. At the expiration of eight or ten weeks seemed to be the time that patients who had passed through the epidemic were most liable to manifest typhus. Whatever may be the arguments adopted by Bateman, Southwood Smith, and others, who contend for the oneness of cause of all denominations of fever, the facts now advanced may, perhaps, in some measure, invalidate, because the two diseases were never inextricably blended—because they were found in the same stair, the same house, and the same room—because the infection caught from patients ill of one description of fever was never proved to produce the other, whilst like produced like in multitudes of instances—because typhus fever never attacks one individual in so short a space of time—because the precedence and succession of the two forms, is, reasoning from what is acknowledged relative to the distinctions of the exanthems and continued fever, a most powerful, and, indeed, an incontrovertible argument, that the two diseases are essentially dissimilar, and because, as observed when the cardinal symptoms are of an opposite nature, the pathological characteristics markedly distinct, we cannot but conclude that the causes giving rise to such effects also vary. The following is a case in point, and one in which typhus preceded instead of succeeded.

[To be continued.]

PLAN OF AN INSTRUMENT,

BY THE APPLICATION OF WHICH IT IS POSSIBLE TO SAVE THE LIFE OF A CHILD IN CASES WHERE, IN THE PRESENT STATE OF MEDICAL SCIENCE, IT WOULD BE LOST, OR, AT LEAST, DANGEROUSLY COMPROMISED.

By WILLIAM JOOS, M. D.
Of Schaffhausen.

THE application of the instrument in question takes place during the act of birth, by presentation of the breach or feet, in cases in which delivery is effected by version and bringing down the feet, and in which a fatal pressure on the umbilical cord is to be feared in cases where the cord is prolapsed and cannot be returned.



The purpose of its application is to secure the cord from such pressure, to maintain the circulation in it, and thus prevent the loss of the child. This purpose is attained in many cases by introducing the umbilical cord into one or two elastic tubes, of sufficient strength to resist external pressure, and by placing this tube, or tubes, between the head of the child and the pelvis of the mother.

In order to introduce the umbilical cord into the tube, the following arrangements are made:—The tube is open on one side by a slit; this linear opening can be enlarged in such a manner, by a finger or otherwise, that the umbilical cord may be introduced into the interior of the cylinder, by means of the other fingers, or any other manipulation. The instrument acts in such a manner, that after a portion of the umbilical cord has been introduced, the enlarged slit instantly returns to its normal position.

The following example may serve as an illustration of the mechanism:—Imagine a quill cut transversely at each extremity so as to form a hollow tube, and slit lengthwise from one end to the other. If into this slit the blade of a penknife, or any other instrument acting as a wedge, be introduced and drawn downwards, it is evident that the inherent elasticity of the quill will close the slit immediately behind its enlargement by

the knife or wedge: so evident is it, that it may be possible to introduce a fine cord into the cavity of the quill, by making use of the triangular space behind the wedge. An analogous process takes place in the instrument in question: instead of the quill there is the instrument itself; instead of the wedge there is the finger; and in place of the fine cord we have the umbilical cord.

It will be necessary during the introduction of the cord to introduce two fingers into the opening, and at such a distance from each other that the cord may be between them, and thus shielded from any injury which the approximating edges of the opening might occasion.

The substance of the instrument consists partly of caoutchouc or leather; to combine flexibility with the greatest possible resistance to external pressure, there are embedded in the body of the tube a series of steel rings, three lines broad, and applied in such a manner, that between every two rings the space of a line remains. The rings are of course not entire, their periphery forming almost 11-12ths of a circle, the remaining twelfth corresponding to the slit. It need scarcely be said, that the rings are firmly united with the caoutchouc or leather, and that neither the surface of the interior of the tube nor the slit will present any irregularities; these parts being lined with caoutchouc or covered with any other convenient substance.

The caliber of the cylinder is just large enough to admit the cord: if there are knots in the cord the instrument could not be applied; its length may vary, according to circumstances, from four to eight inches. An operator should be provided with several, of different diameters. In order to maintain the instrument in its situation in the pelvis after its introduction, a handle made of whale-bone may be affixed to one extremity, or the tube itself lengthened in the manner of a pen, the half of which has been sliced away.

The great resistance of the steel rings will not permit one border to ride over another; this inconvenience is also prevented, by having the surface of one border convex, and that of the other concave, and thus fitting into

each other: or else the rings might be strongly magnetized, by which the negative pole of one border would adhere to the positive of the other.

Some contusions of the head can scarcely be avoided, especially if (as in prolapsus) the operator should be obliged to introduce two tubes. However, in difficult extractions by the forceps similar accidents are unavoidable, and it is at all times more desirable that a living child should be born, although it may have suffered a contusion, as otherwise it will, in great probability, be born dead.

ASIATIC CHOLERA.

It is announced in a foreign journal, but the statement appears to us to require confirmation, that a fatal case of Asiatic cholera occurred at the General Hospital of Vienna on the 7th inst. We have no further intelligence of the advance of this disease in a North-westerly direction.

HARVEIAN MEDICAL SOCIETY OF LONDON.

At the last meeting of this society, held on Saturday, the 16th October, 1847, the following gentlemen were elected officers of the society for the current session 1847-48, being the seventeenth session of the society:—

Presidents.—C. J. Hare, M.D.; J. E. Erichsen, Esq. *Treasurer*.—W. Stroud, M.D. *Honorary Secretary*.—W. Camps, M.D. *Council*.—W. D. Chowne, M.D.; J. G. Forbes, Esq.; J. C. Langmore, Esq.

The ordinary meetings of the Harveian Medical Society are held on the first and third Saturdays in each month, from October to May, inclusive, at 8 o'clock P.M.

SOUTH LONDON MEDICAL SOCIETY.

THE above society (whose proceedings during the last two sessions have been reported in this journal) held its third Anniversary Meeting on the 7th inst. at the Southwark Literary Institution, when very satisfactory reports were presented by the secretary and treasurer. Votes of thanks having been given to the retiring officers, and their successors duly elected, it was agreed by the society to offer to its members a prize of twenty guineas for the most approved essay on the dysentery of this country.

MEETINGS OF MEDICAL SOCIETIES, &c., APPOINTED FOR THE ENSUING WEEK.

Westminster	Sat. 23d, 8 P.M.
Med. Society of London	Mon. 25th, "
Meeting of Poor-law	
Surgeons, Hanover	Wed. 27th, 3 P.M.
Square Rooms	

MEDICAL GAZETTE.

FRIDAY, OCT. 22, 1847.

THE inadequacy of the present scale of payment made by Government to those members of the profession, who undertake the charge of Poor-law districts, is so generally admitted as scarcely to render it necessary to adduce additional proofs in support of the allegation. In this journal, we have never failed to advocate the claims of men whom we have considered to be unjustly treated; and in dealing with whom, a mean advantage has been taken of the overstocked state of the profession to enforce medical attendance upon terms which are in no instance a source of profit, and, in the majority of cases, a serious loss to those who undertake the office. There is now less reason than ever for a perseverance in a system of oppression and injustice, when the Government, in order to relieve the county-rates, has taken upon itself in part the payment for medical attendance on the poor. When this proposition was first announced in the House of Commons, it was regarded as opening a prospect of at least a fair and reasonable remuneration for important public services. But the announcement appears to have been one of the numerous devices contrived to reconcile sections of the community to the pressure of an income-tax; and the result is simply this,—the Poor-law medical officers receive no additional remuneration: they still give their professional services gratuitously to the poor, and their hard-earned incomes are heavily taxed for the general benefit of the community!

We have lately, on more than one occasion, directed the attention of our readers to the injustice with which

Irish medical practitioners are treated, partly with the sanction of men who stand high in our profession, and who are reported to have advised Government on the scale of payment for attendance on fever-cases among the poor. Five shillings a-day for each medical officer while living; and if cut off in the performance of his duties, his widow and children must either starve or enter the Union work-house! The great mortality among medical officers is a sufficient proof of the danger which necessarily attends the performance of these duties; and the extent to which the fever has prevailed, and is still prevailing in the sister-country, renders it certain that the labour thrown upon those who escape the infection must be of the most arduous kind. Dr. Curran and others have offered the noble example of sacrificing their lives out of pure charity, while they have rejected the pittance awarded by Government. They, in whose power it is to make a more liberal provision for the services of medical men, have not even been moved by these heroic examples, which appear to us to furnish the strongest moral condemnation of the principles by which they have allowed themselves to be influenced.

Some time since, we published a memorandum forwarded to us by Mr. F. S. Garlick, medical officer of the township of Halifax, shewing the amount of medical attendance on the poor for a certain period, and comparing it with the present scale of payment. We have now before us another document, setting forth concisely a few plain facts regarding the duties which the medical officer of a Poor-law district has to perform. It consists in a summary of visits and of medicines supplied to Poor-law patients in thirteen weeks, i. e. in the quarter commencing June 25th and ending Sept.

25th. In the two last weeks he was himself labouring under an attack of fever. It appears that during this period there were of

Visits	685
Mixtures	985
Pills	2255
Powders	879
Lotions	37
Liniments	12
Ointments	49
Plasters	53
Fresh orders from Relieving-officer	186

We quote the following remarks from the Report:—

"Let us now look at the remuneration. For making the number of visits, and supplying the amount of medicines here enumerated, the award is £20, or, 4s. 4d. per day. At the same time, it must be borne in mind that Poor-law practice embraces the most unhealthy localities, such as courts, lanes, alleys, cellars, garrets, and crowded lodging-houses,—places which baffle all description, but which may truly be pronounced sinks of misery, filth, and destitution. To attempt to eradicate, or even treat, disease in these places, is like struggling to drive back the waves of the sea.

"This Report must not be considered as applying to me alone, but also to thousands of well-educated medical practitioners who are absolutely toiling for nothing, and hourly exposing their lives to imminent peril. Many, in consequence, as the last few months have proved, have fallen a sacrifice to their conscientious discharge of duty, and the wonder is that the mortality amongst medical officers has not been considerably higher. Surely this is a class which demands better consideration than it has hitherto received.

"It is not necessary, neither is it my intention, to continue these Reports, because they require more time and labour than a medical officer can well afford.

"In conclusion, I earnestly call upon every medical practitioner, in what sphere soever he may be placed, to aid, by every means in his power, in obtaining that proper and reasonable remuneration which is justly due for important public services of this nature.

"This table is correct in every particular."

"(Signed) FREDERICK S. GARLICK.
"Medical Officer for the Township
of Halifax."

It will be seen from this document that the plan adopted in England, is nothing more than the five-shillings-a-day principle,—a sum which cannot possibly pay the expenses to which a conscientious man must necessarily be put!

The wonder is, and the question is uniformly asked by those not of the profession—"Why do medical men take the office upon such degrading terms?" It certainly cannot be for the sake of remuneration; but no man is justified in undertaking duties which must entail upon him not only great responsibility and bodily labour, but actual pecuniary loss. Such is the view taken by men of the world: they are disposed to regard any complaint respecting inadequate remuneration as unfounded, when it is optional with a medical man to accept office or not. In addition to this, many whose hearts are influenced by the hard rules of political economy, are inclined to regard it as a simple question of demand and supply. With apparent plausibility they say:—How can the remuneration be regarded as unreasonably insufficient, when, on every vacancy, there are a hundred candidates ready to accept office upon the terms? We apprehend that this must be the view adopted by the Poor-Law Commissioners and the Govern-

* Mr. H. B. Davies, of Llanerchymedd, lately forwarded to the *Lancet* the following statement of the results of medical attendance on the poor in his district for a period of six months:—

Statement.—From Nov. 8th, 1846, to May 8th, 1847:—Number of visits, 635; number of mixtures, 615; number of powders, 252; number of pills, 548; number of miles travelled to the country, 256. Population of the district, 6787.

Observations.—Remuneration, £60 per annum. I have included all the visits I have given during the six months, both in the village and to the country. I did not enter down the lotions, liniments, ointments, and plasters, as I had not many cases requiring them, although some were sent out.

ment, or we should have long since had an alteration in the scale of payment; and it is a view which is unfortunately likely to influence the judgment of the public—it is exactly that trade-like consideration of the matter which will suit both the pockets and the minds of parochial vestries, and will effectually prevent them from taking the initiative in adding to the salaries of their medical officers! But it scarcely requires an argument to show that there is great injustice in thus dealing with the medical officers. Professional services cannot be treated as goods or chattels, nor should the reward of them be meted out on the principles of political economy. There is a strong *moral pressure* which has a powerful influence on professional men: they see a fellow-creature labouring under illness, they have it in their power to relieve him. Even supposing *that* most unusual occurrence, that a medical man so placed should refuse to furnish assistance out of mere charity or good-will, he will often find himself compelled, in deference to public opinion, to render services for which he will not be paid, and in the performance of which he sacrifices time that might be otherwise employed to his own profit. It is a credit to the profession that these mercenary views are not allowed to influence their conduct: but still medical men must have the means of living, and we know of no way in which there would be a better opportunity of requiting them than by making them a liberal remuneration for their public services.

The great weapon, however, which the Poor-Law authorities can wield against these hard-working members of the profession consists, not so much in this *moral pressure*, which is based on a proper respect for public opinion, as in the state of their own body. There are hundreds in the profession who, regardless of the small salary,

look out for these most undesirable offices, in order that they may become to them the means of introduction into private practice. It is one way of becoming widely known in a district. The Poor-Law authorities look upon this supposed benefit as part of the emoluments. On the other hand, the medical men who practise in the districts, have eagerly taken them, not on account of the salary, but to avoid the positive certainty of an interloper being introduced to the possible detriment of their practices. With these two principles at work, the Poor-law Commissioners succeeded for many years in providing the public with medical services at a remarkably cheap rate. In fact, every appointment became an "enormous sacrifice" to the holder. Whether the Government intends to pursue this principle, which is nothing more than the encouragement of a ruinous competition, remains to be seen. An attempt is about to be made by the meeting of a large body of Union Medical Officers in this metropolis, to excite something like a liberal feeling in those who are henceforth to have the control of these matters; and we trust this reasonable appeal may have that influence with them which it merits.

We have before us the bulky Parliamentary Report of the Committee appointed to inquire into the registration of legally qualified practitioners. It is called a Report, but in fact it consists of the minutes of evidence obtained by the examination of nine witnesses—Dr. Paris, Dr. George Burrows, Dr. F. Hawkins, Dr. E. J. Seymour, Dr. H. Holland, Mr. Lawrence, Mr. Green, and Mr. Brodie. The questions amount to 2739, and these and the answers cover about 226 folio pages! They who make medical politics part of their professional

existence, will no doubt devour with eagerness the whole of this mass of evidence, and perhaps think that a little more space might have been easily devoted to the subject. For our own part, we should have been contented with something less; and it is with no small regret we find that this Report does not contain the opinion of the Committee upon the evidence. The members were probably frightened at the formidable nature of the undertaking, and thus they agreed to come to the very pithy, and for themselves comfortable, conclusion that they would merely report the "Evidence." They generously leave each individual to wade through the questions and answers, and to form a conjecture, as to whether there will be any beneficial result from this lengthened inquiry. To reprint this evidence verbatim would occupy our pages to no useful purpose. We shall take care, however, that such portions shall be occasionally selected for insertion and comment, as may appear necessary in reference to medical legislation*.

Rebiscus.

A System of Surgery. By J. M. CHELIUS. Translated from the German, and accompanied with additional Notes and Observations, by JOHN F. SOUTH, Professor of Surgery to the Royal College of Surgeons of England, and Surgeon to St. Thomas's Hospital. Parts XIII. XIV. XV. and XVI. Renshaw : London. 1846 and 1847.

ALTHOUGH we have already devoted an article to the four concluding parts

* Since the above remarks were written we have seen in the Times newspaper a reprint of Mr. Garlick's statement, with some very apposite remarks on the insufficiency of the salaries of the medical officers of Poor-law districts, either to repay themselves for their time and skill, or to ensure proper attendance on the poor. We insert at page 731 an extract from the leading article of the Times in reference to the subject.

of the elaborate work of Professors Chelius and South, we felt unwilling to conclude our notice without presenting our readers with a few more extracts from the valuable notes with which these fasciculi are enriched. We shall therefore proceed to give a very brief outline of the matters contained in the remaining pages of the work. We took occasion, in our last article, to animadvert somewhat strongly upon the omission of all directions relative to the necessity of carefully examining the condition of the kidneys and of their secretion, especially with reference to the presence of albumen, in all cases of stone, previously to deciding upon the performance either of lithotomy or lithotripsy. The remarks of Chelius on the treatment which should be employed to prepare the patient for the operation are otherwise good, and Mr. South's detail of the system of after-treatment of these cases which has long been pursued at one of our largest hospitals, claims a place in our columns, notwithstanding its length. Mr. South observes :—

"I shall now relate the practice which certainly for the last forty-six years, and I have little doubt for a much longer period, has been adopted at St. Thomas's Hospital. When a patient is ascertained to have the stone, he is placed in a small ward containing only half a dozen beds, and which, during the first part of the after-treatment, is kept private and extremely quiet. Here he remains under the watchful eye of the sister, an experienced woman, to whom all stone cases are assigned, and who is capable of giving the surgeon a full and sufficient account of the patient's symptoms and sufferings during his absence, and to note any little peculiarity about him which a nurse unaccustomed to such cases would overlook. Great care is taken in first instructing these women, who usually remain in this ward; indeed, in thirty-six years, the sister has been replaced only thrice since the death of the sister who had the ward when I first entered the profession, and who spent twenty years there—a sufficient proof of the experience which such persons must acquire.

The patient usually remains for ten days or a fortnight, to accustom him to the place and to his attendants; and it is rarely requisite to pay more than ordinary attention to his diet and habits, if he be in good health, excepting his immediate complaint. If his sufferings be severe, an occasional hip bath is used, which has a very soothing effect, and is often extremely serviceable, if the preparatory soundings increase, as they will

occasionally, his sufferings. I have rarely known it necessary to employ blood-letting or other depleting means, though such necessity may possibly occur, but in ordinary cases they are unneedful and improper. An occasional clearing of the bowels is however requisite; and if the patient have been accustomed to take gin and water for promoting the action of the kidneys—a practice, with regard to young stone-patients especially, very prevalent—it will be well not to deprive him of it at once, or he will become fidgetty and uncomfortable, but to diminish it slowly, or even to continue its use.

Under ordinary circumstances, a stone-patient should not be operated on except his health be otherwise good. His sufferings from the disease itself will call for the performance of the operation. The state of the atmosphere should, as far as possible, be considered. Temperate weather is the most favourable; for if it be very hot, the patient, in the weak state he usually is after the operation, suffers much from its depressing effects; and, if it be very cold, he is liable to chill in the necessarily frequent uncovering to which he must be subjected to keep him dry during the after-treatment.

On the day previous to the operation, a dose of castor oil should be given to clear the bowels, and the diet restricted to rice-pudding and milk, with plenty of barley-water or gruel, but the former of the two is most preferred. If the motions be hard and lumpy, castor oil is added to an injection of gruel, which must be thrown up on the morning of the operation, but if not, a simple injection of gruel is sufficient for the purpose of completely relieving the lower bowel.

Immediately after the operation, the patient is put to bed, with his legs straight and close together, by which the surfaces of the wound are brought gently together, and any slight disposition to bleeding checked. A napkin is passed round the pelvis, and brought up between the legs in the same way as healthy infants are commonly clouted. As it is of great importance that the patient should be kept dry, the napkin is changed every time any urine passes by the wound, and attention is paid to this through the whole course of the treatment. On the evening of the operation day, or the following morning, if there be no bleeding, a piece of lint, folded on the end of the finger, is introduced into the wound, and pressed up the depth of the perineum; this is also replaced every time the patient wets, and is continued until the wound heals; its object is to ensure the healing of the wound from the bottom, so as to prevent, as far as possible, the production of any fistulous passage, which, under this treatment, is of very rare occurrence. A handful or two of camomile

flowers, thrown into a basin, are sprinkled with spirits of wine, well mixed so as to be equally moistened, and then put into a thin flannel bag, and, having been well heated on a warming-pan, are applied over the belly as hot as the patient can bear, on the evening of the operation-day, if there be no bleeding, and this is continued for a week or ten days. If, as sometimes happens, on the second day, the wound be swollen, and the urine do not flow through it, no lint is introduced, but a bread and water poultice applied, and, as the swelling subsides, the water escapes by the wound. Such is the usual mode of proceeding, and neither is the bed guarded with oiled silk, nor cold sponge, nor any other cold applied, even though there were bleeding. Rarely, except under particular circumstances, is any opiate given throughout the cure. The diet for the first two or three days should consist merely of rice or sago pudding, biscuit, toast and tea, or arrow-root and milk, with a plentiful supply of barley-water. As the bowels have been freely relieved, it is unnecessary to give any medicine before the third day, and then only a little castor oil to act gently. But, if there be pain in the belly, or sickness, then the oil must be given earlier, and usually it subsides when the bowels are moved. The urine at first passes frequently by the wound, but usually about the third or fourth day also comes by the urethra; and, as more continues to pass by the latter, so does less escape by the former: and, in about a week or ten days, the wound of the prostate being healed, the water passes only by the natural passage; and, when this happens, the wound is dressed with wax and oil upon the lint introduced as before. In one instance I have known the water cease to pass from the wound after twenty hours, but this is a rare occurrence. Generally, when the water does not at first flow from the wound, the patient becomes irritable and uneasy, and it is well to introduce the finger, so as to break up any little clot which may stop up the wound, after which it usually escapes freely. Occasionally, it may be necessary to resume the gin and water, if the patient flag, which, however, the surgeon himself will attend to in reviewing the state of the health. The patient should be kept in bed some days after the water has ceased to flow by the wound, or, in other words, till it is nearly healed to the surface. If a small sinus should continue open, it is well to twist up a little piece of lint, corresponding to its size, which should be dipped in a solution of sulphate of copper, and gently screwed up to its bottom; but, in most cases, a simple dressing of wax and oil is all that is needed. Commonly, in from three weeks to a month, the cure is perfected; the diet having been gradually

improved, and porter or wine added according to circumstances" (pp. 608-9).

The section devoted to the pathology and surgical treatment of the several forms of malignant disease, as affecting various structures and organs, contains much useful original and selected matter. Few surgeons are now unaware of the almost utter uselessness of an operation in removing true scirrhus disease. Among other similar statements, Mr. South mentions, that, having a vague recollection of hearing Sir Astley Cooper mention the very small number of cases in which cancer of the breast did not recur after the numerous operations he had performed for its extirpation, he (Mr. S.) took the opportunity of inquiring of Mr. B. Cooper, whether he could afford any positive information of his uncle's experience on this point. The reply was—"I cannot find anything relating to the query you put to me respecting the statistics of Sir Astley's success, but have a recollection of something like your own impression, that he acknowledged not more than nine or ten out of the hundred extirpations he had performed did not return, and generally within three years at farthest." Mr. Cooper also informed the author that "he had removed the undoubted malignant breast of Mrs. —, and it was eleven years and a half before it returned in the cicatrix, and then killed her." In the summer of 1836, Mr. South removed a scirrhus tumor in the breast from a woman of sixty-one years of age, its size that of a small bean, which had been discovered only two months. In this case there has been no recurrence of the disease, and the woman has been, and still is, in good health. The most remarkable case of which the author is aware, is one operated on by Mr. Callaway, and this woman was not destroyed by the disease till twenty-two years after the operation. These instances are, however, extremely few in proportion to the multitude of instances in which the progress of the fatal malady is scarcely at all checked by the terrific expedient of an operation. The author most justly argues, that "surgeons should be cautious in urging a patient to submit to an operation for a scirrhus tumor, and still less when it has become a cancerous sore, and the neighbouring glands in either case

have become affected. He cannot promise a cure by the operation, nor can he even say that the patient's condition will not be made worse." Mr. South adds, that he has often heard it stated, that, though the operation will not cure, it will put off the evil day, and retard the ulcerative process; but this he does not believe, for he has known many instances to the contrary.

"The only thing that an operation can do is, temporary palliation, if the patient be subject to severe shooting, stabbing pain, which is not, indeed, very commonly the case, unless the disease be worried by local attempts to cure. The practitioner ought, when consulted under these circumstances, to break to the patient cautiously the nature of her complaint: should inform her that all which can be done by operation is at best merely palliative, and should leave her to decide whether she will yield herself to the operation, knowing the risk and the slender hope connected with it, rather than urge her to an operation which is, without doubt, as regards scirrhus swellings, the most unsatisfactory in the whole course of surgical practice."

The following is a useful and impressive caution:—

"If the scirrhus tumor involve the whole breast, and be very large with full swelling veins, the operator must carefully look to the bleeding, and, I think, tie at once either arteries or veins, which may pour freely, as in a very few minutes very serious, and even fatal, consequences may ensue. Of such a case I have a very painful recollection. I operated many years since upon an elderly woman who had an enormously large scirrhus breast, and the veins of the skin covering it were much swollen. Before the operation, I feared there would be severe bleeding, and proposed taking up the vessels as they were cut through during the course of the operation; but this was overruled, and pressure with the fingers was determined on, leaving the vessels to be tied after the operation. The bleeding was terrific, and" [the blood] "poured from so many veins that it was not possible to grasp and close them. The operation was not tedious, but I had hardly removed the swelling before the woman had died:—a lesson not to be forgotten." (p. 798).

A great variety of subjects are treated of in the two concluding numbers of this work: the principal of these are, tumors of the testicle; cancer of the womb; operations for the restoration of organic parts; elementary proceedings of surgical operations (a chapter

which ought to have been placed at the commencement of the work, not in the obscure position which it now occupies); blood-letting; vaccination; infusion and transfusion; cauterization; division of nerves in neuralgia; and, lastly, amputation, in all its different forms. The use of ether vapour is considered in a brief postscript on "Painless Operations." The author is evidently not disposed to become one of the earliest advocates of this questionable measure. He observes—

"I feel assured, that, unless more cautiously employed than hitherto, it will not be long before many disastrous consequences will result. A medical friend, of high standing, with whom I had some conversation, insisted on the propriety of subjecting the patient to some preliminary trials of the effect of the inhalation before employing it at the time of operating. With this opinion I fully concur, and I should certainly adopt it if I made up my mind to try inhalation at all." [This has now been proved to be by no means a certain precautionary measure.] "But upon that point I am not decided, for I have considerable doubt of the propriety of putting a patient into so unnatural a condition as results from inhaling ether, which seems scarcely different from severe intoxication—a state in which no surgeon would be desirous of having a patient who was about to be submitted to a serious operation.

"It was suggested, with much appearance of probability, that a far more important benefit than even the prevention of pain would arise from the use of ether—that it must lessen the shock to the nervous system generally, and that the after-treatment would be greatly facilitated by the absence of constitutional irritation. But experience has not confirmed these hopes. A patient who recently underwent an important operation, which was performed with rapidity and skill, while he was quite unconscious, gradually sank, and died in three weeks, although little blood had been lost, and there was no organic disease found after death to account for the unfavourable termination of the case: there were two fresh effusions of blood beneath the arachnoid membrane. Another case, still more recent, terminated fatally within three days: the patient never rallied from the sedative effects of the ether, while, at the same time, the spasms in the stump of the amputated limb were unusually severe.

"In conclusion I may observe that there are no operations in which the use of ether seems to be so decidedly *contra-indicated* as in those for the cure of cataract; for, when skilfully performed, they cause hardly any pain, so that stupifying the patient is at

least superfluous. But voluntarily to induce congestion in an organ where inflammation, once set up, is so difficult to control, and where, if unchecked, it produces such deplorable effects, appears to be the height of imprudence. Yet all this risk has been run, and the non-professional public have been astonished to hear how quickly a cataract may be got out. The final results of the operations have not been so eagerly proclaimed." (p. 1009).

The work is closed with a most elaborate analytical index, which occupies no less than a hundred and seventy-seven closely-printed pages: this forms in itself a most valuable work of reference, and deserves to be very highly appreciated by every surgeon who values the literature of his profession. We consider that this product of the combined experience and researches of Professors Chelius and South is by far the most important addition that has been made to surgical literature since the publication of Cooper's Surgical Dictionary.

Cholera, Dysentery, and Fever, Pathologically and Practically Considered: or the Nature, Causes, Connexion, and Treatment of these Diseases in all their Forms. By CHARLES SEARLE, M.D. M.R.C.S.E. late of East India Company's Madras Establishment; and, during the epidemic prevalence of the disease in Europe, Physician in Chief to the principal Cholera Hospital of Warsaw. 8vo. pp. 128. Churchill: London. 1847.

As will be seen by the above title, the professional career of the author of this work has afforded him unusual opportunities of studying the nature and treatment of cholera, dysentery, and fever, as occurring abroad. A discussion upon so intricate and doubtful a subject as the intimate nature of the various forms of disease usually comprehended under the general name of fevers, is, of course, entirely out of the question in a critical notice; we shall therefore endeavour to give, in his own words, a brief outline of the author's theory of fever, and of the mode of treatment which his conviction of the truth of that theory has led him to pursue, leaving to our readers the option either of receiving the former until the further advance of chemical and microscopical study shall have

thrown a little of the direct light of demonstration upon this now most obscure question, or of deciding that in the present state of our knowledge the safest mode of treating fevers of every description is that of applying remedies rather with a consideration of the precise type of the disease, and of the power of each individual's constitution, than with reference to some hypothesis respecting the pathology of fevers generally, which, however ingenious, may probably be absolutely erroneous, and which, even if it be upon the whole correct, may not prove to be by any means applicable to many individual instances of the disease.

Dr. Searle considers that in cholera "the blood-vessels of the stomach and bowels, which, in health, are the vessels principally concerned in absorbing into the system the nutritive juices from these organs, are now, from being in a state of engorgement or congestive fullness (which universal observation testifies is the case in this disease from an early period of its invasion), rendered quite unequal to the performance of this process of absorption—their ordinary and very important function; and that, from this cause, not only is the supply of nutriment cut off, but the introduction of our remedies into the system, by absorption from the stomach for its relief, is prevented also; making good the remark of some observant practitioners in India, that 'remedies appeared to have no more effect, when received into the stomach, than if they had been put into the coat-pockets of the individual'—an observation strikingly in point, and the cause of this congestive distension explanatory of the source of the fluid evacuations, which are simple exudations from these over-distended vessels." These evacuations the author would regard as curative efforts of the system, in relief of the congested vessels, but which, not being so understood, it has been but too commonly the practice to arrest by opium, and of late by the poisonous influence of lead; also affording, as he believes, another reason why the disease has been so generally fatal. We can only afford room for the author's remarks upon the general prophylactic and therapeutic means which he has found efficacious in the treatment of cholera, recommending our readers to a careful perusal

of his observations on the application of particular remedies.

Remedy in prevention.—"From the force of circumstances in which some persons are placed, in despite of their best endeavours to prevent them, derangements of health will, nevertheless, take place; in which case, in the majority of instances, the following pills will be found a most excellent remedy:—Calomel, soccotrine aloes, and Castile soap, of each twenty grains, made into twelve pills. One taken at bed-time for an adult person for one, two, or three nights; or the half of one reduced to powder, and mixed with a little jelly for a child, will increase the secretion of bile, and tend thereby to purify the blood, open the bowels, and excite all the functions; and in thus acting will, with suitable abstinence, materially prevent the accession of cholera or any disease; and further, should it fail in so doing, it will, nevertheless, prepare effectually the way for such other treatment as the case may be found more essentially to require." pp. 38-9.

Indications of Treatment.—Taking nature for our guide, (and, in so doing, I can say, as the fruit of more than thirty years' observation and professional experience, we can never err), the indications of treatment are obviously to excite the secretive function of the liver, and to remove the congestive accumulation of blood from the vessels of the stomach and bowels. These are the chief indications, and speak at the same time to every man's common sense as to their propriety. Another indication presents itself to our notice, which is to supersede or neutralise the poisonous agent or cancer with which the vital stream has been contaminated, by the introduction into the blood of some other agent of an opposite description or antagonist character. These are clearly the indications of treatment, and the whole of them, under ordinary circumstances. But, under extraordinary circumstances, as in the epidemic visitation at Kurratchu, or in severe cases, I should add, and strongly advise, augmenting the amount of vital air in the system by the inhalation of oxygen or the nitrous oxide gas; inasmuch as the epidemic cause, in the instance alluded to, must directly and immediately have diminished the amount of oxygen inhaled, and arrested, also, the exhalation of carbonic acid gas—the product of combustion from the system; and, in thus operating, must have virtually poisoned the blood, and for which, in either case, oxygen would

* That is, we apprehend, whenever we are absolutely capable of accurately appreciating the indications that nature presents for our guidance, which is by no means invariably the case.—REV.

prove a direct remedy. Independent, however, of the above views, there are others which still more strongly point out to us the necessity and importance of this remedy in all severe cases of this disease; for, whether the cause operate from without the system, in diminishing the supply of oxygen, or the exhalation of carbonic acid, or from within it, in diminishing the power of the organs concerned in the absorption or reception into the system of the one, or the expulsion of the other, the effect is virtually the same in both cases. And, as the disease progresses, the coldness and inertia of the system point out to us but too clearly that this—the respiratory function, the primary one of life—however affected, is seriously impaired; this remedy—the introduction of oxygen into the system, cannot therefore be too strongly and earnestly recommended to adoption, and it is as much the duty of the medical attendant to prescribe as any of ordinary and more frequent application. Of the ghastly and livid hue which characterises the countenance, like that of a person suffocated, and often pervades the whole body of those affected at an advanced stage of the disease, the above view offers at once an explanation.”—(pp. 47-8.)

We think it would have added very considerably to the weight of Dr. Searle's very earnest recommendation of oxygen in cholera, had he favoured his readers with the results of his own employment of this potent remedy. Unless he has himself tested to the utmost the therapeutic value of this agent, he is, we apprehend, scarcely justified in assuming that other practitioners are imperatively bound to hazard its use.

“*The Treatment of Fever in all its forms.*—Viewing the several forms and descriptions of fever, before detailed, in the way that I have done, the treatment of all (and I believe I may, with truth, add, fever of every kind), is embraced in a few general principles, definite in kind, though modified, doubtless, in degree, by the age, sex, constitution of the individual, and peculiar circumstances of the case, and consists in carrying out the two great leading indications I have pointed out—namely, relieving the more prominently congested or inflamed organs of the abdomen, chest, or head, by blood-letting, and restoring, at the same time, the secretive functions of the liver, skin, and organs deranged by calomel, antimony, and aperients; following these measures up, as soon as such purposes have been fulfilled, by the exhibition of quinine, as a simple tonic, and in small doses, in one case, and in much larger quantities, as a

febrifuge, in the other: the latter being an indispensable remedy in the large class of fevers of the remittent type, on which I am now more especially, though not exclusively treating.—(pp. 94-5.)

We have no doubt that the general plan of treatment laid down by the author in the above passage is that which he has found most efficacious in the fevers of India, and we do not question that he would always employ the greatest caution in adapting particular remedies to the constitutions of his patients; still we think that had he ever been in the habit of invariably employing general or local blood-letting in those forms of typhus which present themselves in this metropolis, or had he ever attempted to treat cases of the bilious remittent fever of the West Indies upon the emetic plan, he would, ere this, have gained an amount of painful experience which would render him disposed to exercise somewhat more caution in advocating the use of the lancet and tartarized antimony in every form of fever.

In stating our opinion that, upon the whole, this volume is well deserving of the attention of the profession, we must add that we do not make this declaration by any means the more readily after having received Dr. Searle's note, demanding an impartial notice of his brochure, and requesting that we will not condemn any portion of its contents without stating explicitly the grounds of such condemnation. Had Dr. Searle done us the honour to observe carefully the spirit which invariably characterises the whole of our critical notices, he would have perceived that our great object has ever been to judge the works submitted to our opinion solely upon the ground of their own intrinsic merits, quite irrespective of all other considerations. In doing this, we can conscientiously affirm, that we have never, even in one single instance, attempted to treat slightly, or with ridicule, statements or opinions which appeared to us to deserve the smallest consideration. Whenever a solitary opinion has appeared to us to be erroneous or controvertible, we have invariably stated our reasons for denying its accuracy or questioning its soundness; but, where the errors or absurdities of a work have been too numerous, or too flagrant, to deserve or admit

of a full exposition, we have, of course, felt justified in conveying the fact to our readers in whatever manner we thought best, considering that, in doing so, we pledged ourselves that, upon perusal of the work, its faults would prove as apparent to our readers as they were to us.

Report of the Proceedings of the Pathological Society of London. First Session, 1846-7. 8vo. pp. 155. Printed by Bentley. London, 1847.

WE must confess that, when we first heard of the institution in this town of a society, the main object of which was to encourage the exhibition of specimens of morbid anatomy, without aiming at the establishment of general pathological and therapeutic principles by encouraging extended discussions upon the subjects thus brought before the notice of the assembled members, we were strongly impressed with the belief that, however attractive to the mere morbid anatomist such displays might prove, they could scarcely be rendered either of any real interest to the true pathologist, or of any substantial value as extending the general knowledge of disease. We are happy to acknowledge that an attendance upon the meetings of the Pathological Society of London during its first session, and a subsequent perusal of its reports, have convinced us of the error of these unfavourable anticipations. The specimens which were submitted to the Society were generally of the most highly interesting and remarkable description, illustrating a vast number of rare and important forms of disease; and the terse and well-applied remarks of the physicians who presented them, in very many instances conveyed perfectly new facts directly tending to throw light upon important and hitherto undecided pathological questions. The reports of the Society have hitherto appeared regularly in the *MEDICAL GAZETTE*; but in the volume before us the various cases submitted to the Society have been carefully arranged in nosological order, and have received many necessary corrections and additions.

We beg to recommend this interesting report very strongly to the profession generally, but more especially to those who have made the beautiful

science of pathology their particular study. They will find that it contains numerous facts which tend materially to illustrate various hitherto obscure points in the history of disease. The names of the gentlemen who have undertaken the task of arranging this "Report" are modestly withheld: the manner in which they have fulfilled that duty is certainly most praiseworthy.

Medical Intelligence.

ON THE SALARIES OF MEDICAL OFFICERS OF POOR-LAW DISTRICTS.

THE whole plan of farming out the sick poor to the best bidder is as unavoidably destructive of their just rights, as it is oppressive to the medical officer and disgraceful to their Christian neighbours. A man of liberal education and position is taken, and is set upon the work of a gentleman with the pay of a butler. Content with his nominal acceptance of duties which they are bound to see discharged, the guardians of the poor abandon them to the care of an individual whose services are tasked beyond the limit of human strength, are not encouraged by any adequate remuneration, and are clogged and cumbered by unusual difficulties. The stipends at which these officers are engaged, are generally so utterly disproportioned to the services expected, that the honest performance of the work is more a labour of charity than of duty. It is, indeed, this consideration which alone tends to make the evil less than it would otherwise be; for in no profession will pains be found so often gratuitously and ungrudgingly bestowed for charity's sake as in that of medicine. What neither the parish bespeaks nor the guardians deserve, a single surgeon, heavily worked, wretchedly provided, and deeply burthened, will frequently give, touched by the sight of miseries which meet no eye but his, and sympathizing with the pangs of poverty the more readily from his own bitter experience. It is useless to urge that the office is voluntary, and taken at the estimate of the officer himself. Such a practice no more indicates the natural price of medical services than the biddings of a score of Irish cottiers mark the natural value of land. Nor, even if competition could be justified on such a subject as this, is such competition the only force put upon the candidate. If the surgeon of a district does not accept the care of the poor at such a price as satisfies the guardians, he is threatened with a rival, who will be ready, not only to assume the responsibility he has declined, but to undermine such

private connection as his own industry may have established; so that, in self-preservation, he is driven to an office in which he must of necessity cheat either himself, his patients, or his employers. The Halifax guardians, who hire a single officer to do for £20 what two could not properly do for £50, must be aware that they have exacted a contract which cannot be legitimately fulfilled. As a matter of business, and for the sake of a livelihood, it is notorious that a professional man cannot possibly pay a proper attention to the sick poor of a population of 20,000 for £80 a year, whatever he may have bound himself to do under his hand and seal. Common prudence, no less than common humanity, dictates a limit to the competition so disgracefully enforced by magistrates and guardians. Government does not bind itself to accept the lowest tenders even in matters less momentous than human life. When a candidate bids for an office at a remuneration glaringly insufficient to enable him duly to fill it, it is clear that he is either unaware of its duties, or intends to neglect them, or will bring to their discharge only such willingness as compulsion usually insures. And when the subject of such conditions as this is the well-being of the sick poor, they who wilfully enforce them are far more blameable than an inexperienced or helpless functionary for the evils which must inevitably follow.—*Times*.

Selections from Journals.

PATHOLOGY.

NATURE OF THE FÆCAL EVACUATIONS IN CHOLERA. BY M. ANDRAL.

AMONG the alterations found in the solids and fluids of the body in patients affected with cholera, there is one which belongs especially to this disease, and which is characteristic of it: namely, the existence within the intestinal canal of a peculiar white fluid, very similar to water in which rice has been boiled. This material, which is sometimes found in large quantities in the intestines of persons who have died of cholera, and which constitutes the alvine evacuations during life, consists of a muddy liquid, capable of being rendered transparent by filtration, and within which are suspended, in greater or less abundance, lumps of opaque white matter, perfectly untinged by bile. Concerning the nature of this peculiar fluid, it has been considered to consist of the serum and fibrine of blood escaped from its vessels, and poured into the intestinal canal. The liquid portion of this material has been regarded as the serum of the blood; the solid grumous por-

tion, as the fibrine. According to this view an explanation is afforded of the peculiar characters presented by the blood in cholera. And it is considered by many, that the blood, thus deprived of much of its serum and of its globules, can no longer traverse with readiness the different capillary networks of the body, and that thus many of the peculiar symptoms presented by this disease may be explained. The facts, however, on which such an opinion was founded not having been sufficiently proved, M. Andral was induced, by the occurrence of several cases of cholera in the hospitals of Paris in 1846, to submit to careful examination the matters passed from the intestines. After having filtered this intestinal matter, and thus separated it into two portions, the one liquid perfectly transparent and colourless, the other solid, consisting of a number of particles agglomerated together, he treated the liquid portion with alcohol, nitric acid, and heat; but by none of these reagents was a precipitate formed; consequently there was no albumen. The results of an examination of this liquid portion by M. Favre also showed that the organic substance contained in it possessed none of the characters of albumen. This proves, therefore, that the serum of the blood does not enter into the composition of the materials ejected from the intestines in cholera. Like the serum, indeed, this fluid was highly alkaline; but this is a character common also to many other fluids of the economy. The contents of the intestines also are usually alkaline, and the alkalinity is not more marked in cholera than in many other diseases.

Moreover, if the intestinal secretion in cholera is essentially composed of albumen, the quantity of this material in the blood ought to be found considerably diminished, as it is in certain affections of the kidney attended with the transmission of albumen through these organs. The diminution, indeed, in cholera ought to be much greater than in such renal affections, because the quantity of secretion poured from the intestines is very large. But M. Andral having examined the blood in all stages of cholera, finds that the proportion of albumen is almost unaltered, neither manifest increase nor diminution being found. He has obtained equally decisive proof also of the non-existence of fibrine in the intestinal secretions in this disease. No trace of a filamentous texture could be detected by the microscope in the solid masses evacuated. These solid masses he finds to be composed of numerous nucleated and nucleolated cells, closely resembling pus-globules. Besides these globules, which were very abundant, the masses contained also numerous particles of epithelium. It would appear, therefore,

from the results of his examinations, that the white matter discharged from the intestines in cholera consists essentially of a mucous secretion in enormous quantity, and so far altered in quality as to contain an abundance of corpuscles in all respects similar to pus-globules, and to which the white appearance of the secretion is due.—*Comptes Rendus*, 9 Août, 1847.

CASE OF DISEASED VENA CAVA, TERMINATING IN DEATH BY RUPTURE OF THE VEIN. BY DR. E. M. SQUIBB.

On the 30th of April, 1845, Dr. Squibb was requested to see a mulatto man, of middle stature, somewhat emaciated, aged 37 years, who about nine weeks previously had been seized with pain in the abdomen, extending from the lower end of the sternum to the iliac fossa, and chiefly confined to the right side. The patient was a shoemaker, and attributed the attack to sleeping in the cellar, where he worked during the day, with his right side to the wall, the neighbouring cellar being at the time half filled with water. The pain was remittent, and increased in severity during several days: the case is supposed to have been treated as peritonitis: the course adopted was continued for many weeks, and the case then abandoned. On application to Dr. Squibb, the patient complained of much pain in the abdomen, remittent as before, being increased by taking food or drink, and also during the night; pressure upon almost any part of the abdomen also caused increase of pain. Stomach irritable, often throwing off whatever was taken into it, giving the patient a sensation of obstruction to the passage of substances taken, as though the outlet of the stomach were tied. Bowels regular; tongue moist, with a slight white fur; appetite bad; pulse 86, somewhat irregular and full, but not hard; skin dry, slightly warmer than natural, but not subject to changes of temperature; functions of the liver and kidney performed, apparently, as usual; pain sensibly varied by changes of weather. The true nature of the disease was not diagnosed, and there does not appear to be reason to believe that the treatment which was adopted produced any material results; but, upon the suspension of the means employed, the pain gradually abated as the weather became more favourable, and, when able, the patient was advised to try the effects of change of air and diet: accordingly, after a treatment of more than two months' duration, he left the city for a few months.

On the 3rd of December following, Dr. Squibb was called upon to make a post-mortem examination in the case. The man had recovered sufficiently to return to his work, but was again seized with attacks of pain: after treatment for a day or two, the

pain again abated, and the patient felt able to sit up in bed. The exertion of rising up caused a feeling of great weakness and tendency to faint: he was immediately laid down, but expired in the course of a few hours.

On inspection, the viscera were found imbedded in, and quite hidden by, masses of coagulated blood, the viscera themselves appearing to be in quite a healthy condition. On seeking for the source of this great effusion of blood, a rupture of the ascending cava was discovered just below the lower concave surface of the liver. The vein at this point had been very much dilated, and its coats much diseased and thinned: a semi-organized mass or clot, which was contained in the dilatation, was connected by its surface to the softened coats of the expanded vessel, and the rupture had occurred at the junction of the edge of this mass with the side of the vessel, and not at the projecting point of the dilatation. The tumor was on the anterior portion of the circumference of the vessel, and was overlapped by the lower edge of the liver, and by a portion of the stomach; which latter circumstance may account for the sensation of obstruction so constantly complained of during life. The thorax was, unfortunately, not examined.—*Philadelphia Medical Examiner*.

ON WOUNDS FROM FIRE-ARMS WITHOUT BALL. BY PAUL SWIFT, M.D., PHILADELPHIA.

THERE is obviously a widely spread popular error in relation to the effect of the explosion of gunpowder without ball; and even professional writers on this subject are not very definite in regard to the distance at which a pistol, or other fire-arm, so loaded, may be discharged without inflicting a dangerous wound. The popular notion and language is, that the piece is not loaded unless it be charged with ball, slug, or shot, as well as powder, and that its discharge is quite safe, even when held near the person. Moreover, when wounds do occur from such discharges, all parties seem quite sure that the *wad* is the immediate cause. The following case will illustrate the prevalence of this opinion and its fallacy.

On last new year's eve, William Simler, a minor, playfully, but heedlessly, fired a pistol, charged with powder only, at his friend and companion Robert W. Pitt, inflicting a serious wound. Pitt, staggering into the arms of his friends, cried out, "I am shot." Simler, thinking him frightened but not harmed, said, laughing, "It was not loaded," or, as another witness testified, "It had no ball in it." The wound was on the fleshy part of the left hip, above and behind the trochanter major, about one inch in diameter, and four inches in depth; the

integuments were destroyed, and the muscles presented a blackened, mangled mass; it bled but little, and was carefully probed with the finger, which readily passed to the bottom of the wound. No untoward symptom arose till the sixth day, when tetanus in its most distressing form, opisthotonos, supervened, and he died on the morning of the seventh. On a careful post-mortem examination no foreign substance was found, but a minute fragment of woollen cloth, about two inches from the surface, and grains of gunpowder, with which the wound, through its whole extent, was blackened.

Thus it was evident that this fatal wound was caused by the explosion of gunpowder in a pistol of ordinary size; a wound at least four times as large as a ball from the same instrument would have caused; and so mangled were the tissues through this great extent, that vitality was utterly destroyed. Had the unfortunate young man lived, it would have been through great suffering, necessarily attending the tedious and exhausting sloughing of the dead mass.

At the legal investigation which followed, there was some discrepancy in the testimony in regard to the distance at which the pistol was held, when the wound was inflicted; the witnesses differing from one foot to two or three yards: nor is this very strange, as it occurred in the night, in a place not well lighted, and in the midst of a moving throng of some twenty individuals. The patient himself, however, declared his belief that the weapon "almost touched him." The pistol was said, by Simler, to have had a paper wad, but no wad was at any time found, and the evidence given at the time rendered it quite probable that none was used.

Being one of the professional attendants in this case, I was somewhat surprised at the character and extent of the wound; it was obvious no ball could have produced it; nor was it conceivable that a paper wad could have caused such extensive lesions. A considerable research in works on medical jurisprudence failed to give satisfaction, and though the circumstances forced upon my mind the inference that a heavy charge of powder, exploded near the part, had alone caused the mischief, yet, as young Simler had been bound over for trial before a criminal court, it seemed very desirable to possess further data in the premises. With this view I sought, and, through the courtesy of the officers of Jefferson Medical College, obtained the facilities for making the following experiments, which were used at the subsequent trial, and are now offered to the public with a hope that they may be useful in future medico-legal investigations of this nature. The pistol—the same used by Simler—was wadded with paper,

and has a bore about four inches in depth and six lines caliber.

Experiment 1st.—Pistol with an ordinary charge was held 12 inches from the fleshy part of the hip, the part being covered with one thickness of broad cloth, and a twilled cotton cloth, under it; clothes lacerated, and skin abraded; wad on the floor, on fire.

Experiment 2d.—Distance, 6 inches, parts covered as before; clothes lacerated, wad lodged one half inch below the surface.

Experiment 3d.—Distance, 2 inches; wound ragged, blackened with powder, and penetrating to the bone, one and a half to two inches; wad was found immediately beneath the integuments, and somewhat on one side of the principal wound; parts covered as before.

Experiment 4th.—Distance one and a half inch from the ribs of the right side; no covering of cloth; penetrated the cavity of the chest, the wad passing through the intercostals between the ribs.

Experiment 5th.—Distance the same; no covering of cloth; the integuments removed; wad penetrated the thorax, carrying away a transverse portion of the rib.

The subject, about thirty years of age, a male, not recent, had undergone a preserving process with chloride of mercury, considerably hardening the muscles; it was also much emaciated. — *Philadelphia Medical Examiner.*

[We are surprised that, entertaining the opinion that Pitt's wound was inflicted by a weapon in the charging of which no wad was used, Dr. Swift should, in every one of his experiments, have employed a paper wad, which was doubtless the principal wounding agent in four out of five of his experiments, and which very probably was so in the remaining one (the third). Our own belief is, that a wound of the description mentioned in the case could scarcely have been inflicted had not the weapon either been charged with a solid substance, such as a wad, or been directed against some resisting body, such as a button upon the clothes of the injured person. We regret, however, that Dr. Swift should not have endeavoured to ascertain the nature of the injury likely to be inflicted by the discharge of a pistol loaded with powder only.—*Ed. Gaz.*]

MIDWIFERY.

TWO CASES OF DOUBLE VAGINA. BY PROFESSOR MEIGS.

THE first of these cases was observed in a lady, 20 years of age, in labour with her first child. During an examination, whilst pressing the palm of his index finger to the left side of the pelvis, it caught in a seeming bridle, which, at the instant, led him to fear

that the cervix uteri had been broken, so as to detach a semicircular portion of the os uteri, for the pains had been exceedingly sharp; but on pushing the index further, and flexing the finger, he found he could draw the point of it outwards, pulling along with it the bridle in question. On examining then the structure of the external parts, he found the lady had a double vagina. After the head had escaped from the os uteri, Dr. Meigs was not able to force the partition, definitely, either to the right or left. The two orifices of the vagina were exactly alike, and the partition extended across the head of the child, from the front to the rear of the passage, which, by it, was prevented from dilating. As the lady was strong, and the uterine pains powerful, Dr. Meigs feared the vagina might be ruptured, and, therefore, with strong scissors, divided the wall; whereupon the child's head speedily advanced, and delivery was soon accomplished. She never complained afterwards of the operation.

The second case occurred a week later, in a lady, *æt.* 30, in labour with her first child. The os uteri was very much dilated, and a buttock, near which was the right foot, presenting. While examining the state of the cervix, he hooked his finger into the bridle, just as he had done in the case above mentioned, and the same thought was obvious to him, viz. that she had broken off a half ring of the circle of the os uteri; but he immediately afterwards discovered that he had another case of double vagina under management. In this case, the partition was very firm and thick, extending from the os magnum almost up to the os tincæ. He inspected the external structures, and the two vaginas were each perfect and alike included within labia pudendi common to both. Dr. Meigs disengaged the right foot, and brought it down the right channel; the left leg was flexed upon the belly and thorax of the fetus. With a little assistance, the foot was delivered; and the buttock of the child coming downwards, thrust the vaginal wall to the left, and so the trunk was delivered. He had great difficulty to extricate the head of the child, which remained long in the vagina; the infant breathing, from time to time, the air that Dr. Meigs admitted through the hollow of his hand and fingers to its mouth and nostrils. The child, a male, was alive and in good health; the mother recovered, and is quite well.

Some years ago, Dr. Meigs was called by the late venerable Dr. Ruan to consultation upon a case of double vagina in a primiparous woman. He delivered the child with the forceps, through the right canal, without difficulty or any injury, and had, some five weeks later, an inspection of the parts, which, as he remembers, were very similar

to those described in the case above.—*Medical Examiner, and American Journal of Medical Sciences.*

THE NECESSITY FOR CANDOUR AND SINCERITY IN MEDICAL PRACTITIONERS.

GENTLEMEN, there is another matter, that I desire to impress upon your minds before we separate: *in your intercourse with your patients observe candour and sincerity.* Truthfulness of character is a jewel in every relation of life; but in the physician it is beyond price. I could never understand the policy, much less acknowledge the honesty, of deceiving a patient till the last moments of existence, and sustaining hope, by assurances of recovery, even until the hand of death has placed the seal upon the awful falsehood. Falsehood! the term may be too strong. For the honour of our profession I hope it is. There are times when our prognosis of recovery may be perfectly honest, yet, fatally erroneous. Here we err and sin not. But when I hear a physician say of his departed patient, "I knew he could not live, yet I gave assurances of life to sustain him to the last," I tremble for the fearful responsibility which that man violates. When patients or their family appeal to you, never deceive them wilfully—do not make the case worse or better than it really is—and, where death is certain and inevitable, even though it should be distant, never fail to make the fact known—never promise life and then permit them to die in despair. There is a terrible meaning in such a tragedy, which I need not here express. Sincerity and frankness will offend or injure none; and you must rigidly exercise these qualities, else you will compromise the dignity of your calling and hazard your own professional integrity.—Permit me to say, that I believe my intercourse with the sick has always been thus regulated. I have never regretted it, either on my own or my patients' account. It has never made them worse, nor injured me. It calms the unsettled mind, and leads it to rely upon Him who holds the reins of life and death—thus securing that confidence, patience, and submission, which aid the physician in restoring patients to health, and which, should he fail, are so beautiful and consoling in death. There may be times and cases, however, where the result is necessarily doubtful, where the crisis is not yet passed, patients nervous and excitable, and where the least mental agitation might produce such an impression on the system, as to give an unfavourable, perhaps fatal turn to the scale. Here you must be careful not to inflict a wound which you cannot repair. An imprudent and ill-timed remark may destroy life, where encouraged nature, buoyed-up hope,

would have preserved it. Your obligations to the patient, his family, and society, your duty to the profession, and your own inward peace, require you to employ every means for his restoration, while this is possible; and should you do aught to lessen the possibility of this result, you violate these obligations, you disturb the waters of a tender conscience. Thus you may be wrecked against a rock on one side, or engulfed in a whirlpool on the other—let professional honesty be your pilot, and you will pass the strait with safety."—*Dr. Ailee's Valedictory Address: British American Journal.*

ANECDOTE OF DR. WOLLASTON.

MANY years ago there was a strong suspicion that platinum was employed to give weight to bad sovereigns. The solicitor of the Mint communicated with one of the Russian houses which imported platinum, and begged to know whether all their metal went into channels known to themselves to be respectable. They answered that there was an elderly gentleman who never gave his name, who came to them at intervals, and took away considerable quantities. The solicitor begged them to detain this individual the next time he came, in casual conversation, and give him (the solicitor) notice. This was done, and when the solicitor arrived, he found, to his surprise, the merchant talking to his own friend, *Dr. Wollaston*, who had come for his usual supply of platinum to be made malleable by his own secret now made known. Of course the matter ended with a hearty laugh.—*Athenæum.*

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Oct. 9.

BIRTHS.	DEATHS.	Av. of 5 Awt.
Males.... 605	Males.... 495	Males.... 528
Females.. 636	Females.. 527	Females.. 518
1241	1022	1046

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—*Registrars' Districts*, 129. Population, in 1841, 1,915,104.)

West—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	141
North—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 366,308)	199
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	160
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 393,247)	254
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich .. (Pop. 479,469)	298
Total	1022

CAUSES OF DEATH.

		Av. of 5 Awt.
ALL CAUSES	1022	1046
SPECIFIED CAUSES	1019	1000
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	334	311
<i>Sporadic Diseases, viz.—</i>		
2. Dropsy, Cancer, &c. of uncertain seat	95	104
3. Brain, Spinal Marrow, Nerves, and Senses	133	157
4. Lungs and other Organs of Respiration	215	233
5. Heart and Bloodvessels	42	34
6. Stomach, Liver, and other Organs of Digestion	79	74
7. Diseases of the Kidneys, &c. ..	17	9
8. Childbirth, Diseases of the Uterus, &c.	18	14
9. Rheumatism, Diseases of the Bones, Joints, &c.	5	7
10. Skin, Cellular Tissue, &c.	3	2
11. Old Age	55	65
12. Violence, Privation, Cold, and Intemperance	25	29

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	28	Convulsion	37
Measles	52		
Scarlatina	56	Bronchitis	28
Whooping-cough ..	19	Pneumonia	51
Diarrhoea	45	Phthisis	106
Typhus	79	Dis. of Lungs, &c. ..	8
Dropsy	11	Teething	11
Sudden deaths ..	10	Dis. Stomach, &c. ..	4
		Dis. of Liver, &c. ..	19
Hydrocephalus ..	28		
Apoplexy	28	Childbirth	12
Paralysis	16	Dis. of Uterus, &c. ..	4

REMARKS.—The total number of deaths was 24 below the weekly autumnal average. Nevertheless, we regret to perceive that the mortality from small-pox, measles, scarlet fever, and typhus, is considerably above the average of the seasons.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	29.64
" " Thermometer	53°
Self-registering do. max. 79.3 min. ..	32°
" in the Thames water — 54.5 — ..	53.8°

^a From 12 observations daily. ^b Sun.

RAIN, in inches, '72: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 4° above the monthly average.

NOTICES TO CORRESPONDENTS.

Various communications have been received and will be inserted.

Professor ROSA, Vienna.—The letter of October 14th has been received, and a communication will be sent.

Mr. Charles Pooley's case of Spina Bifida will have early insertion.

Lectures.

COURSE OF SURGERY,

Delivered in the years 1846 and 1847,

By BRANSBY B. COOPER, F.R.S.
Surgeon, and Lecturer on Surgery at Guy's
Hospital.

LECTURE XIII.

MORTIFICATION.

Generic term expressing the death of any part of the body—premonitory phenomena—gangrene—sphacelus.—Immediate cause of mortification, impeded circulation.—Remote causes, intense inflammation, debility, physical violence, or poisons.—Some tissues more prone to gangrene than others.—Cellular membrane—skin—mucous membranes.—Case. Serous membranes—rarely primarily.—Condition of capillaries in gangrene.—Limitation—diffused gangrene—liability to hemorrhage—liability to secondary ulceration.—Line of demarcation—progress of separation—sawing off the dead bone—caution.—Gangrene from debility—death of a part not always unfavourable—sometimes induced by art.—Gangrene senilis—lesion of spinal marrow. Excess of heat—cold—poisons—Hospital gangrene—treatment of gangrene.—Furunculi—situation—treatment.—Carbuncle—Distinction between it and Furunculus—old age—situation—treatment.

MORTIFICATION may be employed as the generic term to express the death of any individual portion of the body; for every part of the human system which is organized, or, in other words, which possesses vitality, is liable to be deprived of its nutrition. Under such circumstances it becomes immediately resolvable into dead matter, and therefore every structure in the body possessing vitality is as prone to death as the whole body itself.

This change, however, is preceded by phenomena exhibited either in the blood, capillaries, or tissues, as necessary in such cases as are the premonitory symptoms, to adhesion, suppuration or ulceration, the other results of inflammation, to which I have already alluded.

The stage immediately preceding the actual death of a part, prior to the blood becoming in a state of stasis, is often technically termed *gangrene*; while a partial destruction of the vital principle—one which does not, in fact, implicate all the tissues of the affected part—is generally designated *sphacelus* or *slough*.

The immediate cause of mortification is impeded circulation, whether the remote cause be inflammation or debility, or the effects of physical agents, or poisons.

Intense inflammation.—Intensity of inflammation in itself rarely leads to sphacelus, unless there be either concomitant, constitutional, or local debility, or that some exciting cause remains, so that a continued degree of irritation is kept up beyond that which the capillaries of the inflamed part are able to support.

When violent inflammation is the cause of the death of a part, it is indicated by intense pain, diffused redness, great swelling, increase of heat, and, indeed, by all the usual signs of inflammation, which urgently point out the necessity of immediate local depletion, and, when circumstances will admit, for the removal without delay of the cause of the excitement in order that the action of the parts may be diminished before we employ remedies to increase their power and restore their healthy condition.

If the inflammation still continues, obstinately defeating all the attempts made to subdue it, vesicles will make their appearance on the limb, and frequently at a considerable distance from the inflamed part. These are produced by sloughing of the cellular membrane beneath the skin: the destruction of the former tissue deprives the cutis of nutrition, and produces the effusion of the serum and red particles of the blood which constitute the vesicle.

At this stage of the local disease the constitution becomes affected: the pulse is quick, small, thready, irregular, and sometimes intermitting; the tongue frequently brown and dry; the bowels have a tendency to become costive; hiccough supervenes with muttering delirium; and synchus, or typhoid fever, forms the sequel of that which commenced, as synocha, a high degree of irritative fever.

But it is not always a constitutional tendency to gangrene which leads to the death of the part inflamed, for the nature and severity both of the constitutional and local symptoms vary according to the character of the different tissues subject to the disease. Those, for instance, which possess but a low degree of vitality, have a tendency to slough under less violent inflammation than the more highly organized parts, and a greater amount of constitutional irritation is consequently produced. The cellular membrane more readily than any other structure goes into a gangrenous state from inflammation, which extends with greater rapidity, but produces, perhaps, the least constitutional derangement, especially if early provision be made for the removal of the slough as soon as the vitality of the part has been destroyed. By this means the protracted injurious influ-

ence arising from the presence of an extraneous body, will be prevented.

The skin frequently sloughs, particularly after erysipelas and carbuncle, and this action is denoted by its change of colour, temperature, loss of sensibility, and formation of vesicle. As soon as these signs present themselves, it should be ascertained whether this condition results from the sloughing of the cellular membrane beneath, and if that proves to be the case, openings should be immediately made for the removal of the subcutaneous dead structure. This is the mode of treatment invariably adopted for the cure of carbuncle, and which saves the skin from that extensive gangrene which would arise from the dead cellular membrane being allowed to remain in its original situation.

The mucous membranes rarely slough, probably from the facility with which the capillaries of this structure effuse their contents, and thus relieve themselves from over-distension. Sloughing does, however, sometimes occur in cases of chronic dysentery, or protracted inflammation of an intestine from any physical cause—as in strangulated hernia, &c. In April 1839, a patient of Dr. Addison's, who was labouring under a chronic disease of the bowels, attended with occasional purging, passed a perfectly cylindrical portion of membrane, rather more than three inches in length. The interior of the cylinder was studded with small dark spots, as if innumerable grains of coarse gunpowder had been strewed upon, and become adherent to, its inner surface. These spots were at first thought to be small depositions of blood and fibrinous matter, but afterwards, upon closer examination, in consequence of their grittiness, and as the person had been taking chalk mixture for some time, it was considered probable that they were composed of particles of chalk mixed with blood. The patient was much relieved by the evacuation of these substances, and ultimately recovered.

The mucous membrane of the bladder sometimes sloughs in consequence of over-distension, resulting from dysuria. I have also known sloughing of the urethra from the injudicious employment of too strong injections prescribed for the cure of gonorrhoea.

The serous membranes are still less frequently destroyed by gangrene than the mucous, but the peritoneum oftener than the pleurae: when, however, they are thus attacked, the disease generally occurs primarily in the organ which the affected part of the serous membrane was destined to cover. The capillaries of the tissues, in a state of gangrene, undergo perceptible and invariable changes: they first become distended to a degree beyond that which their

tonicity can support, and sometimes to such an extent as to produce rupture: in which case ecchymosis is the result.

Soon after the capillaries have become abnormally distended, the blood coagulates within them, and immediately transudation of the serum and red particles takes place: hence the dark colour of the part, so generally concomitant with gangrene.

No absorption of the effused fluids takes place which would lead one to the belief that vitality in any part is necessary in order that it may be removed by the living absorbents; the sensibility of the tissue thus affected is entirely destroyed, as well as its natural temperature, and sphacelus is now complete. The most favourable termination to sphacelus is that which is designated by surgeons, *limitation*; which implies that the living parts have thrown out a quantity of plastic organizable fibrine, which performs the important office of circumscribing the dead tissue, in the same manner as adhesive matter constitutes a barrier to the diffusion of pus in abscess.

When, however, the effused matter is not composed of coagulable lymph, and therefore not capable of becoming organized, the sphacelus continues,—or, in other words, no line of demarcation is formed between the dead and living parts.

This condition may depend upon want of power in the constitution, or in the tissue itself; either of which circumstances will prevent the effusion of plastic matter.

Under these circumstances, more especially in the case of constitutional debility, hæmorrhage frequently occurs; for, although the blood may have coagulated in the gangrenous part itself, so as to check the bleeding for a time, still, when the process of separation commences, the artery above the line of demarcation may not have become obliterated by adhesion, from the want of the plasma, and a discharge of blood will necessarily result on its division.

Another unfavourable event may take place during the progress of gangrene, or even sometimes after the separation of the dead from the living parts has been completed,—namely, the ulceration of the granulations. This may occur from some secondary constitutional derangement, suddenly affecting their integrity and healthy nutrition; hence the necessity for carefully watching the general health, for paying great attention to every constitutional symptom, supporting as effectually as possible the powers of the patient, and, above all, for maintaining the healthy secretions.

When cases terminate favourably, and the line of demarcation is properly formed, separation takes place in the following manner:—

A white line denotes the point of separa-

tion between the living and dead structures, and usually indicates the cessation of gangrene.

The cuticle around this line desquamates from the true skin, which soon undergoes a process of disintegration, and becomes absorbed, although not a molecule of the sphacelated part itself is carried off by the absorbent vessels.

The cellular membrane is next removed, but the line of separation takes place at some distance from that point at which the skin disintegrates: the low vitality of the cellular tissue frequently leads to deep and extensive sloughing sores, which conceal at times the true nature of the original disease, more particularly after erysipelas and syphilitic ulcers.

All the tissues ulcerate within the limits of the line of demarcation, with the exception of the bones and blood-vessels; the latter become filled with coagulated blood usually as high up as the first branch given off, and there the presence of the coagulum sets up in the vessel an inflammatory action: this leads to the deposition of lymph, by which it is closed, and hæmorrhage prevented upon the separation of the trunk from which the branch was given off. The spontaneous removal of the dead bone is very slow, and it is but rarely left entirely to nature to perform the task, as its removal with the saw may easily and safely be effected if the period for the operation be happily chosen. It should not be attempted until the granulations secrete healthy pus; and, in sawing the bones through, the greatest care should be taken that no injury whatever be done to the granulations: for, if they be made to bleed, a tendency to slough may follow, and gangrene be induced. The great benefit derived from sawing off the bone as soon as all the soft parts at the line of demarcation have been absorbed, is the removal of the deteriorating influence of the decomposing mass of dead matter, which in itself is often sufficient to lead to the recurrence of gangrene.

You should observe, gentlemen, that the structures occupying this space between the living and dead parts,—constituting, in fact, what is technically termed the line of demarcation,—are in a very different condition to the structures either above or below them. They have neither the high degree of vitality of the granulating surface above them, nor are they dead like the parts below, but they are in an intermediate state,—one in which they are capable of being resolved into their proximate elements and of entering into the absorbent vessels.

When a portion of the body in immediate proximity to a joint is in a state of sphacelus, and the line of demarcation is situated at an articulation, although the dead bone may be

perfectly exposed, it is, in my opinion, better to let nature separate it from the living structure, than to interfere with the process, as there is no bone implicated in the ulceration, and nothing but the ligaments to be absorbed, in order to effect the ready separation of the mortified parts. The appearance of the granulations above the line of demarcation forms the best indication of the kind of constitutional and topical treatment which ought to be employed, and those signs must ever regulate your practice, rather than the adoption of any general mode of treatment, or series of favourite remedies, however high may be the authority for such a plan of procedure. Let it, however, be borne in mind, that whatever stimulates either the constitution or the part affected, without increasing their powers, should be avoided: hence the necessity for the administering of bark, opium, porter, and so forth.

Constitutional Debility.

That gangrene and sphacelus result frequently from constitutional debility, every day's experience tends to prove. It frequently occurs, for example, after typhus fever, and other adynamic influences: but still, even from this cause, death of a part is not always to be considered as an unfavourable symptom: nature occasionally adopts it for the general or partial relief of the patient; sometimes for the purpose of throwing off diseased structures, and sometimes to give exit to dead or foreign matter, as portions of dead bone, pus, or intruded substances.

We often imitate nature in this respect, by applying caustic alkalies, acids, chloride of zinc, &c., to hasten the separation of the parts, which cannot be thrown off until their vitality has ceased. These applications expedite their separation, not only by destroying the diseased tissues, but also by strengthening the surrounding healthy structures.

Still, however, the judgment must be exercised as to the proper choice of period for the application of these escharotics; for if, from constitutional or local debility, the living parts are incapable of supporting the stimulus they produce, an extension of gangrene may be induced, and infinite mischief be the result. Even leeches, blisters, or any counter-irritant which may perchance be coincidentally indicated, must be had recourse to with the utmost caution. Almost every practitioner must have learnt from his own experience the danger of applying blisters or leeches after children have suffered from a severe attack of scarlet fever.

In hydrothorax and disease of the heart there is a great tendency to gangrene from any slight local excitement, especially in a part distant from the central organs of circulation, possessing in itself a low degree of

vitality. Gangrena senilis frequently occurs from obstruction to the circulation, in consequence of an abnormal deposition of phosphate of lime in the coats of the larger arteries, from which they lose their tonicity and elasticity, and are consequently unable to supply the distant parts with blood.

It is on this account that old people frequently lose their lives merely from cutting a corn, or even from too closely cutting the toe-nails, so as to produce a wound, whence an inflammation is set up beyond that which the weakened parts are capable of sustaining, and gangrene follows.

This tendency to earthy deposits on the coats of the arteries depends upon the difficulty with which phosphate of lime is eliminated from the blood by the capillaries of the osseous system: hence the tendency to its being deposited in the more vital tissues.

Obstruction of the veins, from any morbid or mechanical cause, may also lead to gangrene.

The tendency to sloughing from lesion of the spinal marrow is very remarkable, although it occurs with such frequency. In this case the nates often become gangrenous, and this so rapidly, as to be scarcely attributable to mere pressure from the recumbent posture: it probably depends upon the influence induced in the ganglionic system, with which all the spinal nerves are more or less connected, and an interruption to the vital integrity of the arteries may result, and thus the effects be produced.

Physical causes of gangrene.

Severe contusions, gun-shot wounds, and other powerful local stimulants, such as various chemical agents, will at once destroy the vitality of the tissues brought under their influence, and the same processes will necessarily be required for their separation as when their death occurs from the diseased actions already alluded to. The tearing through of the principal artery of a limb may lead to gangrene; or a tumor, as an exostosis, may, by its pressure on an artery, cut off the supply of nutriment to the parts below so completely as to lead to their death.

Much practical advantage is derived from this knowledge, as it must of necessity induce the surgeon strictly to inquire how far the gangrene was the result of constitutional deterioration, and how far it depended upon mere topical lesion, and he would be enabled to regulate his practice accordingly.

Excess of heat and cold will also produce the death of organised matter exposed to these agents. A temperature approaching to 230° produces vesication of the skin, but does not lead in healthy constitutions to the death of the parts, unless improper remedies are employed to produce reaction. For in-

stance, if cold lotions, or ice, which has sometimes been recommended, be used, deep sloughs will follow; whereas, if tepid applications had been resorted to, the inflammation caused by the burn might have terminated in resolution.

Exposure to extreme cold rarely produces death of the part in this climate; but in Canada I have frequently known it to do so. I believe that the abstraction of the heat must be sufficient to produce coagulation of the blood before it can cause the actual death of the part; and when the degree of cold is not sufficient to produce coagulation of the fluids, sloughing does not usually follow.

If, however, (as in the case of a burn), reaction be too suddenly induced, the subsequent inflammation may destroy the tissues which had already been weakened by the debilitating effect of the cold. The proper treatment, therefore, of a frost-bitten part, is to rub it well with snow, or place it in cold water, so that the return of its natural temperature may be exceedingly gradual.

It may perhaps be said that no degree of heat less than that which is capable of coagulating the albumen, will produce immediate death, and that no degree of cold short of that which can coagulate the blood will destroy the vitality of a tissue; proving how general is the opinion of the great similarity, if not identity, of the effects produced, by these, apparently, so different agents.

Poisons.

Decomposing animal and vegetable matter, malaria, and foul air, from any cause, have a tendency to produce gangrene: this we frequently experience in crowded hospitals, where they produce what has been termed "hospital gangrene:" under this influence all the ulcers in a ward may simultaneously assume a gangrenous disposition.

This has been attributed to contagion, and generally to the careless use of dirty sponges and similar causes, but in fact it results from the influence of contaminated air, and therefore must be regarded as purely epidemic. This may be considered as pretty well proved, by the fact of the beneficial effects immediately derived from free ventilation of the building, or the removal of the patients to some other locality.

A surgeon would never think of performing any operation upon a patient under the above circumstances, without first doing everything in his power to obviate the tendencies arising from the local causes described.

The bite of some species of serpents seems to produce an immediate tendency to gangrene of the part, as if some new constituent were introduced into the blood,

which rendered it suddenly incompetent to supply nutrition to the surrounding tissues, owing perhaps to decomposition; or possibly by the actual destruction of the vitality of that fluid.

Treatment.—From whatever cause sphacelus may have arisen, whether from the intensity of inflammation, constitutional debility, physical agency, or poisons, the first step is certainly to remove the exciting cause; and no benefit can be expected from the application of remedies to the affected part, unless means be employed to remove, if possible, or at any rate to mitigate, the abnormal influence exciting the diseased action.

Thus, in acute gangrene, the excited action will probably require local depletion for the purpose of relieving the congested vessels of the affected tissue: sometimes, indeed, the depletion should be general, although, almost at the same moment, it may be advisable to administer constitutional support, to aid the subsequent restorative processes.

In chronic cases no depletion is admissible beyond inducing a slight action on the bowels, which is generally required to prevent their becoming torpid,—a state almost to be considered as pathognomonic of the disease.

Generous and nutritious diet is generally indicated, but stimuli must frequently (especially in the country) be avoided until the line of demarcation is completely formed. The affected limb should be perfectly covered with "carded wool," for the purpose of maintaining a strictly equable temperature, prior to the limitation being established, and as soon as the demarcation is formed between the living and dead parts, stimulating poisons are generally required to assist in throwing off the sloughing portion: such as the following are generally employed—port wine, stale beer-grounds, poultices, nitric acid lotions, and the epithema plumbi diacetatis. The latter application Sir Astley Cooper very frequently employed, and as I believe it is peculiar to Guy's Hospital, it may be useful to tell you the ingredients of which it is composed.—*R. Confect. Rosæ ʒj.; Mellis, Tinct. Opii, Liq. Plumbi diacetatis, aa. ʒij. M.*

As constitutional remedies, ammonia, bark, and opium, are generally administered, and frequently in the London hospitals wine or bottled porter. When gangrene occurs without any apparent local cause, and its origin can only be traced in the state of the constitution, the removal of the dead part by operation should never be attempted above the line of demarcation, as the stump would be extremely liable to become gangrenous. The bone may be sawn off so soon as a complete separation between the

dead and living parts is established, and the granulations have secreted pus, but every precaution must be taken, as I have already mentioned, not to injure in any way the living structures.

Should much seor arise from the dead part, and its removal be not thought advisable, chloride of lime sprinkled over the bed, and about the chamber, will be found extremely beneficial, as it decomposes the noxious gaseous matter emanating from the decaying animal substance, and destroys its baneful effects. But when gangrene follows severe accidents, and the death of the parts clearly depends upon the physical injury unattended by any constitutional disturbance beyond that inseparable from the lesion, amputation may be performed above the line of demarcation, as there is not the same reason to fear the incised surface assuming a gangrenous disposition: but even in this case the line of demarcation should be complete before the operation is performed.

Some surgeons have recommended amputation prior to the line of demarcation being formed, but I should doubt the propriety of such a step under any circumstances; as the delay in the limitation of the gangrene alone is sufficient indication of want of constitutional power, and consequent probability of the extension of sphacelus from the operation. In my opinion, a constitution which is incapable by its own powers of separating a dead portion from living structures, can ill support the additional irritation produced by a surgical operation, and in that case the attention of the surgeon should be wholly directed to the improvement of the general health of his patient.

Furunculi or boils.—It is almost unnecessary to speak of furunculi, or boils, separately from gangrene, as they, in fact, result from sloughing cellular membrane, and are therefore attended by very similar constitutional conditions to those that accompany gangrene generally.

Boils are scarcely ever found to be caused by any local defect alone, but to depend upon constitutional derangement, and they arise most frequently from disturbance in the digestive organs, and are, in fact, a defect of the assimilative powers. They attack indiscriminately, various parts of the body; but perhaps it may be said that they are most frequently formed on the posterior rather than on the anterior aspects. They present a conical form, with a hard firm base, and generally with a fluctuating apex; they are extremely painful to the touch, and rarely terminate by resolution. Their local treatment consists chiefly in freely laying them open to their base, so as to leave ample outlet for their sloughing cellular membrane, which is in fact the source of the irritation they

produce. Black-wash poultices and fomentations also facilitate the separation of the dead cellular tissue from the living parts.

The constitutional means to be employed are indicated by the extent of the dyspeptic symptoms usually coincident; hence the necessity of gently opening the bowels, and afterwards administering bark and mineral acids. Patients the subjects of this disease appear to be very liable to its return, and usually require change of air to prevent relapse: sea-air seems to be particularly efficacious.

Anthrax, or carbuncle.—The anthrax, as well as the furunculus, is attended with aloughing of the subcutaneous cellular tissue, and I feel a difficulty, gentlemen, in pointing out to you any distinction which can be drawn between the two; unless, indeed, it may be said, that the term anthrax is usually applied when there is but a single instead of numerous swellings occurring at the same time, and perhaps, also, when the disease attacks the old instead of the young. When carbuncle attacks old people, the diminished power of the constitution gives a peculiar character to the disease, which reacts more violently upon the patient's general health, and renders it a much more dangerous affection; not so much on account of the disease itself, as from the inability on the part of the constitution of the patient to promote and support the processes necessary to reparation.

The carbuncle frequently attacks the cellular membrane at the back of the neck, forming a tumor of considerable size; the skin being of a deep reddish-brown colour, darker in the centre than at the circumference; the tumor feels very deeply seated, and is surrounded by an extensive areola of highly inflamed skin. The suppurative process goes on very slowly, and the patient complains of burning pain, attended with considerable irritative fever, which soon puts on a typhoid character unless judicious means are employed to remove the source of constitutional disturbance.

Early and free openings should therefore be made, to allow of the ready exit of the slough, and to relieve the extreme tension of the skin: this object is best effected by making a deep crucial incision to the very base of the tumor. Stimulating poultices should then be applied: the best is, in my opinion, a black-wash poultice, although stale beer-grounds are frequently employed in these cases. Should there be any difficulty in the natural separation of the slough from the living parts, it may be carefully removed by artificial means. It is sometimes recommended to employ caustic for this purpose, but, for my own part, I should fear that too intense an action might be induced

upon the living parts to render its employment quite safe. The constitutional treatment is to be the same as in cases of more extensive slough, which have already been described in speaking of the treatment of mortification, namely, that first the soothing principle is to be adopted, at the same time the constitutional powers must be supported, and that subsequently stimuli are to be administered. The appearance of the granulations after the slough has separated will afford the best indication in the appropriate choice of remedies to severe convalescence.

CANCER OF THE CÆCUM.

At a late meeting of the Reading Pathological Society, Mr. Harrison read a case of cancer of the cæcum, accompanied with obstruction of the bowels, in which the small intestines were found distended with flatus, the colon empty, and much contracted. The cæcum was found to be enveloped in a mass of cancerous matter, larger than a man's fist, with an adherent nodule the size of a walnut, and connected at its upper part with the lower edge of the liver. Small masses of similar deposit were also observed scattered through the mesentery, omentum, on the surface of the liver, and in the cavity of the pelvis. One of a larger size half surrounded the sigmoid flexure of the colon. The internal structure of the liver, kidneys, stomach, &c. was apparently healthy. On examining the cæcum, the termination of the ileum was greatly dilated, and distended with feces. The ileo-colic valve was perfect, but much hypertrophied and elongated, extending into the cæcal cavity, like an elongated cervix uteri. On laying open the cæcum, it presented a large irregular ulcerated cavity, with the walls from a quarter of an inch to one inch in thickness, and containing masses in a state of separation or mortification, and of extreme foetor. Two questions arose on this case [during life] as to the cause of the obstruction.—1st, as to whether it was fecal or mechanical; 2d, as to the seat of the obstruction. The farther the obstruction is from the pylorus, the less is the pain and the vomiting. As these were not very great, the inference was that it was low down. The great distension also proved this. Another circumstance, which indicates the seat of the obstruction, is the effect on the urine; when it is seated high up, the urine is more or less suppressed; when low down, it is not affected. Speedy or tardy collapse also follows the same rule.—*Provincial Medical and Surgical Journal.*

LECTURES

Delivered at the Royal London Ophthalmic Hospital, Moorfields, June, 1847.

By W. BOWMAN, F.R.S.

LECTURE I.

General view of the eyeball—its size, shape, and tension—Structure of the SCLEROTICA—Implantation of the recti—thickness at different parts. Of the CORNEA—shape—surfaces—thickness—Is it a lens? Of the lamellated tissue—Number of superposed lamellae—Tubular interstices—Union with sclerotics. Anterior elastic lamina—how tied down—Conjunctival epithelium—Posterior elastic lamina—Marginal plexiform tissue—The triple distribution—Circular sinus—epithelium of the aqueous humor.

GENTLEMEN, — The benevolent founders and supporters of this hospital have ever been desirous that it should not merely minister (as it does so largely) to the relief of the poor of the metropolis and surrounding counties, but that its ample resources should be employed as means of instructing the rising generation of medical men in the very important class of diseases which are daily treated within its walls. I need not inform you particularly of the share it has had in enlarging and diffusing the knowledge of ophthalmic diseases. It will be enough that I refer, as evidence on that point, to the names of Saunders, Farre, Travers, Lawrence, and Tyrrell,—the distinguished men who, for more or less of the first forty years of its existence, were the instruments of its usefulness, and the main source of that amount of celebrity which it has acquired. Of these we can still number but one amongst our present colleagues; and I cannot mention the name of Dr. Farre without a passing acknowledgment of what this institution owes to him, and of the honour I feel it to be associated with one so venerable and respected.

It is our wish, according to our ability, to continue to make the Ophthalmic Hospital subservient to the same ends as heretofore. The number of patients considerably exceeds that at any former period, being now upwards of 7000 annually, and these afford the means of studying on a great scale the several forms of disease which attack the complex and important organ of sight.

The lectures which we offer are not intended to supersede the necessity of your observing, each one for himself, with minute and accurate attention, the realities of disease and the effects of remedies, but rather, by

opening the subject, and acquainting you with the general outlines, to remove the first difficulties from your path, and to stimulate your minds with a fore-taste of the pleasure which all will certainly experience who devote themselves to the earnest pursuit of knowledge in the field before us.

In the arrangements for the present season the task has devolved upon myself of giving you some account of certain structures of the eye-ball, which are of primary consequence to the practitioner, as being those involved in the operations he will be called on to perform, and also as being the seat of several of the more common, as well as severe, morbid actions which affect the organ. That you may form some estimate of the importance of that class especially which belongs to the cornea, I may mention a circumstance which I remarked with concern during a visit to that noble institution the School for the Indigent Blind, in St. George's Fields. It was this—that a very large number of all the cases of total and irremediable blindness which those walls receive are the result of inflammations of the front of the eye, its transparent inlet having been darkened or destroyed by the ravages of disease, which we are *quite sure* might, in a great majority of instances, have been controlled by skilful and timely treatment. These cases occur amongst the poor—a class to whom the eye is, if possible, even more valuable than to the rich, because without it they can hardly obtain their daily bread, or enjoy the common comforts of existence,—a class, too, among whom it is probable that most of you will be called-on to minister during the early years of your professional life. More than this, I think, need not be said to impress you with the importance of the subject which is about to engage our attention.

It would be easy to expatiate on the utility of an exact knowledge of the structure of the body to one who desires to study that body in its morbid states; but I am willing to hope that such an argument would be almost superfluous; and, at any rate, (that I may not detain you any longer on introductory topics) I shall content myself with observing, that, though a man of genius has now and then become a great physician, like Hippocrates or Sydenham, by an acute and persevering observation of disease, and of the effects of remedies, and without much acquaintance with anatomy, yet that the common voice of mankind proclaims that he who best knows the *mechanism* of the body will, with a like study of the other departments of medicine, be the best able to comprehend the *actions* of the body, both in health and disease.

General view of the eyeball.—The eyeball, gentlemen, as you know, consists pri-

marily and essentially of a *sheet of nervous matter visually endowed*,—that is, capable of being so affected by light, that, when daly connected with the sensorium, what we call *sight*, or *perception of light*, is the result. This sheet, which we term the *retina*, is brought towards the surface of the body to meet its appropriate stimulus, the commissure of nervous substance which connects it to the brain and to the opposite retina being called the *optic nerve*. In front of the retina are placed *transparent media*, which, as a whole, refract the light so as to bring it to a focus on the nervous layer, which is spread out in a concave form to receive the more perfect image. The retina is supported behind by a firm resisting tunic, the *sclerotica*, which is prolonged in front of the transparent media, as a transparent integumental membrane, the *cornea*. Between the retina and the sclerotica is a very vascular membrane, of a dark brown colour, the *choroid*, which is advanced behind the cornea under the form of a vertically-hung contractile curtain, the *iris*, in the centre of which is an aperture, the *pupil*, capable, by varying its size, of regulating the quantity of light admitted to the retina. To allow of the movements of the iris, the transparent medium across which it is extended, and which fills the concavity of the cornea, is a *fluid* one, the *aqueous humor*. Behind the aqueous humor and the iris is the *crystalline lens*, the most solid and highly refracting of the media, imbedded in the front of the third humor, the *vitreous*, which itself occupies nearly four-fifths of the globe, and fills and supports the hollow of the retina. To hold the crystalline in its place, the choroid is fixed to the outer case at the junction of the sclerotica and cornea, and sends inwards a circle of folds, the *ciliary processes*, which impress and fasten themselves to the vitreous humor all round the lens.

It is unnecessary that I should speak at present, even in general terms, of the mobility of the eye, of its outer protective appendages, or of the source of its supply of blood. The limits to which I am confined oblige me to proceed at once to those points in the anatomy of the globe which more immediately concern our present object. And, first, of the *size and shape of the eyeball*.

Shape.—The human eye, when carefully separated by dissection from the muscles implanted in it, and from the surrounding fat and areolar tissue, is seen to be about spherical in shape, with this exception—that the cornea which forms the front clear part, whereby the light has access to the interior, bulges somewhat beyond the rest, is more convex, and is the segment of a larger sphere. The sphere of the sclerotica,

however, is not absolutely geometrically true in all cases, or even generally. I have found it many times slightly spheroidal, with the longest axis sometimes transverse, sometimes longitudinal; and even other and more irregular departures from the exact spherical shape occur, the lateral regions occasionally presenting trivial swellings, chiefly between the muscles, and not affecting the integrity of the organ as an optical instrument. Behind, where the retina is spread out, the sclerotica is thickest and stiffest, most completely retaining its proper curvature even after it has been cut into small pieces; and it is interesting to observe how carefully the exactness of its curvature in the posterior region has been provided for in the construction of the eye generally in the animal series: in some instances by extraordinary thickness and density of the fibrous tissue; in others by the development of very thick or highly elastic cartilage, and even bone, in its stead.

Size.—The size of the adult human eye varies within certain limits, as might have been expected. Nevertheless, as it is a part which, by reason of its complex mechanism, and the peculiarity of some of the textures it comprises, attains its complete development, like the internal ear, before most other organs of the body have reached their adult condition, these limits are very confined, if we except instances amounting to disease. Of many measurements which I have made, the general result is that the diameter of the sclerotica is from seven-eighths of an inch to an inch.

The transparent cornea forms by its anterior surface a portion of a sphere, the diameter of which is from $\frac{3}{8}$ to $\frac{5}{8}$ of an inch (that is, of usually less than two-thirds of an inch), and it often happens that the surface of the globe recedes or is depressed very superficially near the line of junction of the sclerotica and cornea. The cornea forms from one-sixth to one-seventh of the horizontal circumference of the whole globe. In considering the size of the eye, I should guard you against judging of it in any degree by the size of the aperture of the eyelids; the latter, indeed, is that which most governs the *apparent* size of the ball, and is also of much importance to the practical surgeon, as enabling him more or less readily to manipulate in his operations on parts within the lids. Moreover, the cornea is often *apparently* smaller than it really is, in consequence of a degree of opacity creeping over its border in the declining stages of life.

Tension in health and disease.—The eyeball has naturally a certain tension, arising from the due repletion of the outer case with the tissues contained within. It gives a tight or resisting feel to the finger applied.

upon it, and the exact degree of this tension belonging to the healthy state it is essential for you to know, both that you may be aware of the resistance your instruments will encounter, and also that you may be able rightly to appreciate by the touch the departures from the healthy standard of tension which occur in the course of several diseases. When disorganizing processes have occurred in the interior, the eyeball frequently becomes soft, although, perhaps, the finger alone can inform you of this evidence of the impaired nutrition of the organ. On the other hand, in inflammations of an acute kind attacking the globe, an unnatural hardness is perceptible on pressure, usually accompanied by that dull sickening pain which attends distension of the fibrous tissues, and due in this case, I suppose, in a great measure, to the sclerotica and cornea. The unyielding nature of these coats occasions all internal distending forces—as vascular engorgements, fibrinous or purulent effusions, if their accession has been sudden and rapid,—to react in the way of counter-pressure on the parts within, impairing their functions in the first instance, and soon irrecoverably destroying them, if allowed to continue unchecked. We have analogous phenomena in the case of other organs enveloped, like the eye, in a tunic incapable of hasty dilatation.

To proceed now to a more particular account of the sclerotica and cornea. And first of the sclerotica.

Structure of the sclerotica.—The sclerotica consists of a very dense and intricate interlacement of white fibrous tissue. The surface is dead white, not glistening, like most other examples of the tissue, by reason of the working up of its fibres in an irregular way, into a web which exhibits little indication of their course. In tendons, in fasciæ, even in the dura mater, a silvery lustre results from the parallel course of contiguous fibres; and the small creases occurring on these confer a satiny surface, which is extremely characteristic and beautiful: but this is not the case with the sclerotica. Those parts of it which are seen, as the white of the eye, have no lustre of their own: the brilliant reflection of light is rather from the moist surface of the investing conjunctiva, set off, it is true, by the opaque dead white of this tunic behind. The fibres of the sclerotica, when unravelled from one another, and examined in minute portions under a high magnifying power, do not quite resemble those of tendon and fascia: they are more straight and stiff, less wavy, less connected: they also tear and break more easily, so that you cannot run them out into such long shreds as in the case of tendon or ligament. Nevertheless, they

swell out and become semi-transparent with acetic acid or the caustic alkalies, just as ordinary white fibrous tissue. You can best see the characteristic differences I have now alluded to in the posterior part of the sclerotica of the ox or sheep. This much resembles the thick coat of the air-bladder of the sturgeon, which I had once an opportunity of examining in the fresh state, and it is possible that it might even be made to yield isinglass like that structure. There is also a good deal of yellow elastic tissue intermixed with the white in the sclerotica.

But although it cannot be said that the fibres of the sclerotica are arranged with regularity, yet they appear to have a more or less determinate direction from behind forwards in the hinder and middle portion; and we may also observe on the inner surface, after the choroid has been removed, an appearance of arching fibres, having their convexities turned forwards; and, moreover, the anterior part usually presents a different arrangement on its outer and inner surfaces, the fibres of the former being more circular, following somewhat the border of the cornea, especially over the insertion of the recti muscles; while those of the latter are more obviously directed forwards.

With reference to this subject, I may refer to the *mode of implantation of the tendons of the recti muscles into the sclerotica*. These, as is well known, become flattened and expanded somewhat before joining the sclerotica; and I believe it is a common opinion that they join side to side, and spread out as a kind of external investment to the front of the sclerotica, advancing up to the cornea, and constituting the white tunic which is visible between the lids. I do not find, however, that this description, as regards the human eye, agrees with nature. On the contrary, the tendons of the recti appear to be truly implanted into the sclerotica, penetrating its substance, so as to be buried from view, and leaving its exterior layers exposed under the conjunctiva. I have several times traced the continuation of these tendons for a considerable way forwards in the middle substance of the sclerotica, to a certain extent making a division of it into an inner and outer layer, and gradually becoming lost to the eye, as they break up into laminae, and blend with the neighbouring structure very near the margin of the cornea.

Thickness of the sclerotica at different parts.—It may not seem very important in a practical point of view to inquire into the relative thickness of the sclerotica at different parts of its extent. It is interesting, however, in a physiological sense, especially with reference to comparative anatomy, and is really not without its practical bearings, since we find the effects of certain morbid

actions to be limited or otherwise modified in correspondence with it. The sclerótica is thickest behind, for the sustentation of the retina, and for the preservation of its due curvature at the most material spot. Around the foramen by which the optic nerve enters to the retina, and which is near the bottom of the eye, the sclerótica is about $\frac{1}{2}$ of an inch thick. Hence it becomes thinner forwards as far as to a quarter of an inch behind the cornea, where it is only about $\frac{1}{4}$ of an inch thick. From this line to the cornea it again increases in strength, and is from $\frac{1}{4}$ to $\frac{1}{2}$ of an inch thick, so as to be able to give greater support to some of the internal parts, which I shall have to speak of in a subsequent lecture. In the monkey I have found this front part the thickest of all.

The recti muscles being inserted as described, groove the sclerotic before entering it, and hence this membrane is rendered very thin immediately behind their insertion, hardly, in fact, being more than $\frac{1}{4}$ of an inch thick in those parts. These being, therefore, the weakest parts, are those which might be expected to yield earliest under any inward distending force; and accordingly I have observed that abscesses of the eyeball are prone to point in these situations. While upon the subject of the insertion of the recti muscles, it may be mentioned that, in cases where the contents of the globe are diminished in quantity, as a result of pre-existing inflammation of a destructive kind, and the eye consequently shrinks to a smaller size, the softness of the organ allows the recti muscles to impress it in the lines of their transit, and to bulge it in their intervals, thus pinching it, as it were, into a quadrangular shape. In such examples the thinner parts of the sclerótica under the tendons of the recti, being pressed upon by those tendons, and unsupported from within, are sunk in or flattened.

We will now turn our attention in a more particular manner to the transparent portion of the outer case, the *cornea*, a part of which it would be difficult to exaggerate the importance in reference to the operative surgery, or the pathology of the eyeball, and which can hardly fail to attract your interest in a high degree, however imperfect my description of it may prove.

I shall not stop to inquire what light comparative anatomy, or the early stages of its development, might throw on the true affinities and nature of this structure, but will merely observe that there is some reason to suppose that the cornea, considered from this point of view, comprises two orders of parts—one belonging to the nervous vesicle which forms the earliest indication of the appearance of the eye in the early embryo; the other, and the larger, pertaining

to the outer integument. I prefer, on this occasion, remembering the object before us, to take the cornea as we find it in the adult human subject, and to describe it, layer by layer, as it actually exists in those in whom you will be called upon to study and relieve its morbid states.

FIG. 1.



Relative size of the two surfaces of the cornea in one instance: *a*, anterior surface; *p*, posterior surface.

The cornea is nearly circular in shape, though we often find it wider from side to side than from above downwards. Its anterior surface is generally less extensive than its posterior, sometimes considerably so. The edge, therefore, by which it is continuous with the sclerótica will be bevelled, so that the sclerótica will overlap a little. Sometimes, on looking at the surface of a vertical section of these parts at their junction, we see the cornea received as it were into a groove of the sclerótica, but even here the hinder surface of the cornea is almost invariably the more extensive; and I cannot say that I have ever seen an instance in which the bevelling was reversed, so that the cornea should overlap the sclerótica.

The two surfaces of the human cornea are, as far as I can judge, perfectly parallel to one another—that is, their corresponding points are equidistant, and the substance of the cornea is of the same thickness throughout. This has been doubted by some anatomists, who have described the central part as thicker than the margins, and have supposed that the cornea was a meniscus-convergent lens, capable of magnifying objects. But the mode employed to prove this, viz. that of first dipping the detached cornea into water to smooth its surfaces, and then, holding it over objects, finding it act as a slight magnifier, seems open to fallacy, since the only way in which it can be conveniently held is with the convex edge downwards, in which position, the water still adhering would fall to the central part, and make a lens of it. But I have failed to find the membrane magnify when secured against this source of error; and, moreover, an exact vertical section of a recent cornea exhibits an uniform thickness. When the part has been macerated it swells somewhat, and bulges less at the sides where it is tied to the sclerótica than in the rest of its extent. I need not observe that the cornea, though not itself a lens, yet acts as a powerful converger of the rays of light by virtue of the

aqueous humour, which differs little from it in density, filling up its concavity in the natural state. That the cornea is not thicker in the middle is indicated by the phenomena of the disease called *conical cornea*, in which the weak or bulging part is always at or near the central region. In fishes the cornea is much thinner in the middle, to allow for the very projecting lens.

The absolute thickness of the cornea is greater than that of the anterior region of the sclerotica, being, according to the measurements I have made, from about $\frac{1}{16}$ to the $\frac{1}{8}$ of an inch. These measurements exhibit considerable variety, which it is important for the practical surgeon to be aware of.

The first portion of the cornea that comes under our review is the *cornea proper*, or the *lamellated tissue*. It is this which forms the greatest proportion of the thickness of the cornea, and gives it strength and toughness. It is bounded externally by a peculiar lamina, the *anterior elastic lamina*, on which rests the *anterior or conjunctival epithelium*, and it is bounded behind by another peculiar lamina, the *posterior elastic lamina*, behind which is the *epithelium of the aqueous humor*. It is the cornea proper alone which is strictly continuous with the sclerotica.

Of the cornea proper.—That the cornea proper is lamellated has long been known, and may be shown in a variety of ways. If a flap be shaped out on its surface by superficial incisions and then torn up, the surface of laceration will be nearly parallel to the outer surface, and in this way layer after layer may be removed, especially in the eyes of the larger domestic quadrupeds. The knife, too, especially if blunt, having once pierced this tissue, is found to pass most readily in a horizontal direction, at whatever depth. These are circumstances with which all should render themselves practically familiar who propose to make the living eye the subject of their operations. This physical construction of the lamellated cornea makes it desirable for the surgeon, when about to penetrate the cornea, to thrust the knife somewhat perpendicularly into it, since the arrangement of the tissue tends to carry the instrument in a horizontal course. The lamellated cornea is tough, unyielding, and almost perfectly transparent; and it is interesting to study the precise nature of its lamellæ, because there are facts which show that its transparency is very easily impaired by any derangement of their relative position, or by an increase of their natural tension. For example, if a thin vertical section of this part be made, and laid upon a slip of glass moistened with water, it remains trans-

parent; but if you attempt to stretch it, in whatever direction, or to compress its parts into a smaller space, it instantly becomes milky and opaque. Again, if you squeeze a fresh and perfect eye between the finger and thumb, the cornea, it is well known, becomes immediately opaque in your hand, but quite recovers itself as you remit the pressure: and in all cases the degree of opacity is proportionate to the pressure you exert. This is a very remarkable experiment, and may serve to illustrate in some measure the opacity or haze of the cornea, which is apt to occur at an early stage of acute internal inflammation of the eyeball, attended with great engorgement of its vessels—a state also elucidated by what occurs in artificial injections of the eye, for when the vessels become gorged, and the globe tense and hard, the cornea invariably grows dim, and shuts off the iris from view.

Now, that the lamellæ of the lamellated cornea are not individually co-extensive with the cornea itself is easily proved by a vertical section, in which we see the lines bounding the lamellæ to be very limited and interrupted, not extending far along the cut surface; the same view proves the lamellæ to run into one another at very numerous points throughout the entire cornea, so that the interspaces are very limited in their superficial extent: though their number is correspondingly great. Moreover, in tearing up a flap in the way I have already alluded to, innumerable connexions between the lamellæ are seen to be torn through, and the surface exposed is not smooth, but covered with numberless minute lacerations of tissue. It would, therefore, be most correct to say that the strength of the tissue lies in a horizontal rather than in a vertical direction—that the horizontally-extended elements are thicker, and stronger, and less easily lacerable, than the more delicate, more fragile, vertically-placed elements which connect them with one another. Now if we endeavour to count the superposed lamellæ, it is evident that we can arrive at no very exact result, in consequence of their mutual connexions and overlappings: but nevertheless it will be found in general, that on the surface of a vertical section, somewhere about sixty intervene between any two corresponding points on the opposite surfaces of the tissue.

There is a fact of some interest to be learnt from such a section, if it be made extremely thin, and it is this:—that the connexions between the horizontally-extended lamellæ of the cornea are themselves membranous or lamelliform, and not mere fibres; for on opening out the lamellæ, so as to enlarge their interspaces, very delicate membranes are seen passing from one to another, and it is but rarely that complete perforations exist, however thin the section have been

made. In such specimens, viewed under a high power, we have a faintly fibrous texture apparent in even the *most delicate* of these films of membrane, the fibrous elements being held together in that form by an homogeneous intervening substance.

The nature of the *interstices* of the corneal tissue does not appear to have been particularly inquired into. It has been generally considered that the interlamellar spaces are themselves flattened or lamelliform, and that they contain fluid in sufficient quantity to fall easily from one part to another; and it has been imagined that inflammatory products, lymph or pus, might gravitate in such natural spaces to the most dependent part of the cornea. For the existence of fluid, stress has been justly laid on the fact, that if we lay bare the corneal tissue and make strong pressure on the globe, we shall observe first a dewy moisture, and then distinct drops of transparent fluid over the entire surface. But this shews the porosity of the entire cornea, rather than the existence of free fluid in its interspaces; for in the perfectly fresh eye the dew does not form until the pressure has been kept up for some time, and under continued pressure the aqueous humour gradually passes out; while if this humour have been previously evacuated by puncture and replaced by air, no dew forms upon the surface. Moreover, an incision into the lamellated cornea does not set free any visible fluid. It has been sometimes thought that pressure produces opacity of the cornea, by driving out fluid from its interstices, but the return of transparency is so simultaneous over the whole surface, when the pressure is remitted, as to forbid the supposition of any fluid having escaped and re-entered at the border, while the presence or absence of the aqueous humour does not affect the result at all: pressure produces opacity if the chambers are filled with air. Hence it may be concluded that the fluid existing in the corneal tissue is only sufficient to moisten its elements, not enough to lie free in its interstices: and further, that the elementary lamellæ are naturally in contact with one another, much in the same way that the filaments of the areolar tissue touch one another in other parts.

Of the corneal tubes.—Being desirous some years ago to discover whether the interstices of the cornea-proper had any regular shape or arrangement, I made a small puncture near the border of the cornea of an ox, and, introducing the mouth of a mercurial injecting tube, was delighted to find the metal, under gentle pressure, running in a beautiful and curious manner, quite unlike anything that occurs in any other tissue, and from its constancy and peculiar figure evidently demonstrative of a natural structure. The mercury coursed rapidly along in per-

fectly parallel and very delicate lines for a short distance, then diverged at an angle into other similar tubes, which were found to cross the former either above or below. The tubular spaces thus injected appeared to be jointed or broken at varying intervals, and to present what in the nerve-tubes would be termed a varicose condition. The whole lamellated cornea was filled with such tubes, for at whatever depth or part the mercury was inserted the same results followed; although from the unnatural distension occasioned by even a small extent of such injection, it was impossible in a single specimen to fill the interstices of every portion of it, and at different depths, at one and the same time. These definitely-marked passages in the corneal tissue it seemed not very easy to force or burst, but when the mercury was urged to that extent it separated the horizontal lamellæ for a greater or less space, and formed irregular flat patches, very similar in shape to those which are met with in the morbid state known as *onyx*, and which latter, I therefore conclude, is attended with a breaking down of the membranous connections between the horizontal lamellæ—connections which form the side walls of the corneal tubes now described.

FIG. 2.



FIG. 2.—Tubes of the cornea of the ox, injected with mercury.

I found that I could inject the tubes with size and vermilion quite as definitely, though not so easily, or so as to form so beautiful an object, as with mercury; but this fact was sufficient to prove that the peculiar varicosities of the tubes were not a false appearance due to the tendency which

mercury has to collect itself into the globular form.

What I have now mentioned is what occurred with the cornea of a large quadruped. I found it far more difficult to make a similar injection of the human cornea, and of that of the cat or smaller animals, and it is not probable that interstices of equal size—perhaps hardly of the same shape and arrangement—exist in the latter specimens. From the greater thinness of the membrane, and the greater proximity of the entire tissue to the vascular arches from which its nutrient supply is drawn, it may be supposed that such a free and ample system of canals may be dispensed with. In the human cornea, however, (as in fig. 3) I have clearly seen a tubular arrangement of the interstices under favourable circumstances: although, in general, the tissue too readily gives way under the distending force which it is requisite to employ. The length of the canals between the constrictions does not exceed the 12th of an inch, and is for the most part much less, while their width is from 1-500th to 1-600th of an inch: this is in the human cornea.

FIG. 3.



FIG. 3.—Tubes of the human cornea, injected with mercury. At *a a* extravasation has occurred.

It might be conceived that these corneal tubes were a modified form of lymphatic vessels, as it is generally thought that a close lymphatic net-work may be injected in a somewhat similar fashion under the skin and in other parts. But I have not found the mercury escaping along the lymphatic trunks

when pushed from the cornea towards the sclerotica. On the contrary, it requires hard pressure to make it escape from the cornea at all, and then it enters the anterior chamber of the eye, or the space between the sclerotica and choroid, or even subconjunctival blood-vessels. Hence it is probable that the corneal tubes do not communicate directly with any other set of vessels or natural channels.

With regard to the use of these corneal tubes, we shall probably not be far wrong in supposing that they serve to promote and facilitate the permeation of this thick non-vascular structure by those fluid portions of the blood which alone have access to it. Whether the special arrangement of the tubes which I have described is concerned in endowing the cornea with its necessary transparency, it does not seem possible to determine. It might be imagined to contribute to hold all the lamellæ in place, and to prevent derangement of their relative position. A brief account of these and other points which I shall notice is given in the third part of the *Physiological Anatomy and Physiology of Man*, just published by Dr. Todd and myself.

I have already stated that the lamellated tissue of the cornea is the only one which, properly speaking, is continuous with the sclerotica. This continuity is so perfect that the two textures cannot be torn asunder, or in any way be shewn capable of detachment along the line of junction. Even maceration is not capable of effecting their separation, and if we consider the close affinities of the two structures, and their mode of union, it will be easy to understand the reason of this. In fact, both belong to the class of fibrous tissues, and have very similar physical and chemical properties. The fibrous bundles of the sclerotica, intricately interlaced and intermixed with threads of yellow elastic tissue, become continuous at the border with the lamellæ of the cornea. The elementary parts of the one join on to those of the other; the interstices, which are irregular and open on all sides in the sclerotica, assume a regular arrangement, and become tubular in the cornea. On the surface of a very thin vertical section of the two structures, carried through their line of junction, the transition of one into the other can be very satisfactorily traced. By acetic acid the sclerotica swells and becomes transparent, and exhibits the yellow fibrous element of its structure, and also sparing nuclei, like those belonging to tendinous parts. By the same agent, the cornea first grows opaque as the arrangement of its parts is interfered with by the swelling of the tissue during the progress of the acid through it, but subsequently it all very nearly resumes its transparency, merely displaying

here and there on the surface of its lamellæ the elongated nuclei which were previously indistinctly seen, and which correspond closely with those of the sclerotica and other fibrous tissues. The description of the lamellated cornea will be most conveniently concluded in connexion with that of the *anterior elastic lamina*, to which I shall, therefore, now direct your attention.

The *anterior elastic lamina* has not hitherto, as far as I know, been distinguished by anatomists, and yet it seems a structure of a very interesting kind, an acquaintance with which will perhaps enable us to discriminate some morbid phenomena from others with which they have been classed. It is a continuous sheet of homogeneous membrane, nearly similar in essential characters to the posterior elastic lamina of the cornea and the capsule of the lens, being perfectly transparent and glassy, without appearance of internal structure, and being very slightly or not at all influenced by acids or by boiling. Its thickness in

FIG. 4.

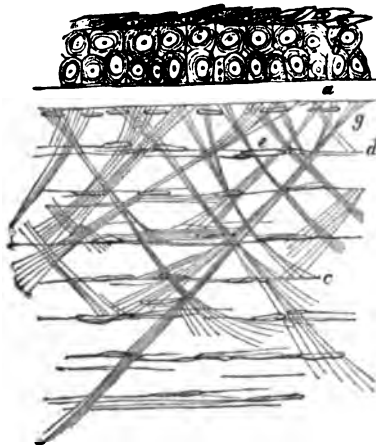


FIG. 4.—Vertical section of the human cornea near the surface. *a*, anterior elastic lamina; *b*, conjunctival epithelium; *c*, lamellated tissue; *d*, intervals between the lamellæ, showing the position of the corneal tubes collapsed; *e*, nucleus of the lamellated tissue; *g*, fibrous cordage sent down from the anterior elastic lamina. Magnified 300 diameters.

the human eye is from about $\frac{1}{16}$ of an inch, and it forms an unbroken covering to the whole laminated cornea, giving it that smooth glistening surface which is exposed by scraping off the conjunctival epithelium. This latter rests upon it as the epithelium does upon the basement mem-

brane in other situations, and I may observe that it appears to me to be strictly a highly-developed form of the basement membrane of the mucous system, remarkably modified in this particular part to answer a special purpose. The manner in which the anterior elastic lamina is united to the lamellæ which it serves to cover is very interesting. It must be borne in mind that the anterior surface of the cornea is convex, and that the maintenance of its exact curvature is of primary importance to vision, as it is there that the first inflexion of the rays of light falling on the eye takes place: and further, that the conjunctival epithelium being a soft and fragile substance, must take the figure of the surface on which it rests: hence, probably, the arrangement I am about to mention. The anterior elastic lamina, a firm, resisting, uniform layer, placed in front of the more soft and porous lamellated tissue, is tied down to the anterior lamellæ, at innumerable points, by filaments of similar texture to itself, which it sends in among them. These, as they penetrate the lamellæ, divide and expand in such a manner as to take firm hold of them, and are thus gradually spent among the four or five lamellæ which lie nearest to the surface. It is singular, too, that these filaments are not sent vertically, but everywhere in a slanting direction among the lamellæ, so that in a vertical section they appear to cross one another at right angles. This arrangement might, I imagine, be shown, on mechanical principles, to be the best possible for the maintenance of the convexity of the front of the cornea. It is obvious, from the elaborate manner in which the anterior elastic lamina is thus tied down to the lamellated texture, that it can hardly be raised as a separate layer; and it is this, probably, which has hitherto kept it concealed. In fact, it scarcely admits of being demonstrated except on the face of a section of the cornea.

The anterior elastic lamina becomes exceedingly thin, and disappears, at the margin of the cornea, its attenuation being accompanied by an increase in the number and size of the filaments which it sends down to the lamellated tissue; so that it seems to expend itself by giving origin to these filaments. And from its extreme border, where it ceases to be distinguishable, a great abundance of them runs into the sclerotica, in that slanting direction which the elastic lamina would have itself taken if it had been prolonged in the same curve. These filaments mingle with the elements of the sclerotica, and are gradually lost among its middle fibres. The artificial mode in which the margin of the anterior elastic lamina is thus fixed, may be roughly likened to that of the awning of a tent: it is rendered much more obvious if a thin vertical section of the

parts at the junction of the sclerotica and cornea be treated with acetic acid.

That this lamina, although apparently homogeneous, like a sheet of glass, is very permeable to fluids, as is the capsule of the lens, may be readily shewn by squeezing an eye after the conjunctival epithelium has been scraped off: the small drops which collect on the surface rest upon this lamina after having transuded through it.

The existence of this lamina will help, I think, to explain, what must have often puzzled surgeons, viz., the tenacity with which small particles of steel, or other sharp angular fragments, stick in the front of the cornea only just within the surface. These will often remain for many days, or even weeks, and prove the cause of much inflammation, and yet still be found difficult of extraction; which could hardly be the case if the lamellated tissue and the conjunctival epithelium were the only textures in which such particles could be imbedded.

The *conjunctival epithelium* of the cornea may be now conveniently adverted to: it is that delicate, soft, almost pulpy layer, which forms the anterior surface of the cornea, and is so easily raised by the knife or needle. It is a continuation of the epithelium of the conjunctiva covering the front of the sclerotica and lining the lids, and consequently of the cuticular investment of the body. It is a familiar fact, that in animals which cast their entire skin periodically, this layer is detached with the rest of the epidermis.

In those animals which lose and renew the cuticle, by a constant process, unmarked by periods of intermission, the superficial particles are gradually shed after arriving at their mature state, while others are as gradually originated in the deepest region, on the tissue which serves as a basis of support, and near which lies the source of their nutriment. This is precisely what occurs on the outer surface of the cornea in the human eye. The epithelial particles are exceedingly transparent, but in position, form, and mode of growth and decay, they bear a close resemblance to the epidermis. In different animals the number of epithelial layers varies according to the size of the eye; in man, they constitute only a triple or quadruple series, altogether not exceeding the $\frac{1}{100}$ of an inch in thickness. The deepest, which rest on the anterior elastic lamina as on a basement membrane, are slightly elongated vertically, and stand endwise; the next are angular, or subglobular in shape, and the most superficial are flattened scales, more or less overlapping one another, and of a darker hue than the others when seen by transmitted light. The imbricated scales of the surface have their minute inequalities filled up in the natural state by the watery secretion of the acrymal gland, so as to present a nearly

smooth refracting surface to the impinging rays of light; and by the frequent movements of the eyelids, the particles which are decaying and losing their place are brushed away and escape by the nose. In a learned and interesting paper by Dr. Mackenzie,* you will find described a method of seeing in your own person the nature of the corneal surface. This epithelium is rapidly renewed, if scraped off.

We may now, gentlemen, turn our attention to the *posterior elastic lamina of the cornea*, a layer which has been long known as the membrane of Demours or of Decemet, or as the elastic lamina of the cornea, or as the corneal part of the membrane of the aqueous humour.

This layer is very easily detached by scraping from the hinder surface of the lamellated tissue of the cornea, for it adheres but slightly to this tissue, and sends no filaments among the lamellæ as the anterior elastic lamina does. It is a uniform, transparent, homogeneous layer, considerably thinner than the anterior elastic lamina, (being only from $\frac{1}{1000}$ to $\frac{1}{500}$ inch thick) but like it not affected by maceration, by boiling, or by the action of acids. Though very hard, and capable of resisting much pressure, and giving a crisp sound when divided by the scissors, yet it is very brittle and easily torn, and its fragments then show a remarkable tendency to curl up on all sides into rolls, and always with the anterior or naturally convex and attached surface inwards in the roll, so that it would appear to be formed or laid down *in situ* in a shape precisely the reverse of that which its elasticity inclines it to assume.

When an ulcer has destroyed the lamellated tissue, it sometimes happens that, for a short time, the posterior elastic lamina is thrown forwards into the breach, by the pressure of the aqueous humour behind it, and forms there a small pellucid vesicle, which soon, however, gives way by rupture, allowing the humour to escape, and the iris to fall forwards against the opening. This morbid state illustrates very well the properties of the layer now under consideration.

With regard to the behaviour of this posterior elastic lamina at the margin of the cornea, much difference of opinion—I might say, much uncertainty—prevails: some holding that it is reflected in a modified form over the whole of the anterior and posterior chambers of the eye, others believing it to terminate with the cornea; but none, as far as I am aware, having given a full and accurate account of its actual condition, which is one of considerable impor-

* On the Vision of Objects of and in the Eye. Ed. Medical and Surgical Journal, No. 164.

tance to a correct knowledge of the physiology of the organ, and to the understanding of several of its diseases.

Marginal plexiform tissue of this lamina.—

This layer, then, will be found to terminate at the border of the cornea in the form of plexiform fibres of the yellow elastic kind, or that variety which is allied to itself in essential characters. In this respect it resembles the *anterior elastic lamina*. The plexiform fibres spring only from its anterior surface, or that towards the lamellated cornea. They begin to appear a very short distance from its edge, and as they arise the lamina itself becomes thinner, and is at last altogether spent. They all pass irregularly outwards, occupying, of course, a position between the posterior elastic lamina and the lamellated cornea; and are finally reinforced by those fibres which come from the thin and extreme edge of the lamina. Immediately beyond this edge, therefore, at the rim of the anterior chamber, there is a layer of open flexiform fibres, passing outward, or from the axis of the eye, and being the continuation or representative of the posterior elastic lamina. The posterior or these fibres then curve backwards to the iris, and become inserted into its anterior surface at its greater circumference in the form of small pillars; and near their insertion begin to resemble the white fibrous rather than the yellow fibrous tissue in chemical and other qualities. I have found these pillars of the iris much more evident in some animals than in others, but time will not allow me to enter on comparative details. They exist in all mammalia, and have their analogues in other classes. They are in contact with the aqueous humour, where they form the rim of the anterior chamber. A needle may be passed underneath them from the anterior chamber so as to suspend by them a considerable fragment of the eyeball. The great portion, however, of the fibrous continuation of the posterior elastic lamina goes not to the iris but to the ciliary circle,—a name by which anatomists refer to a flattish circle of gray semi-transparent tissue, which intervenes between the ciliary processes of the choroid and the sclerotica, immediately behind its junction with the cornea, about which extraordinary differences of opinion prevail, but which I shall hope to show you in a subsequent lecture is muscular. For convenience, therefore, I will now assume that it is such, and term it the ciliary muscle. This muscle arises, then, from the fibrous tissue coming from the posterior elastic lamina,—the fibrous tissue passing in a sheet backwards to the anterior region of the ciliary processes, and giving origin on its outer surface, or that turned from the anterior chamber, to the

fibres of the ciliary muscle, which then clothe the outer surface of the choroid for about one-eighth or one-tenth of an inch, as far as the ora serrata.

There are still other fibres derived from the posterior elastic lamina—viz. those placed most anteriorly, and which were the first to take origin from it. These, after a short course outwards, become separated from the sclerotica by a narrow space all round, known as the *sinus circularis iridis*, and which has been considered as a venous canal; afterwards they pass to be united firmly to the sclerotica beyond this sinus, and in so doing share principally in its formation. But there also exists here a series of *circular* fibres, those just described being more or less radiating; the circular lie outside the others, are opaque, white, and stiff, contributing to the formation of the circular sinus, and to that firm union, the *ciliary ligament*, which subsists between the ciliary processes and the anterior rim of the sclerotica: and which, as a whole, effectually serves to retain the aqueous humour from escaping into the space between the sclerotica and choroid.

I am aware of the difficulty I must experience in attempting to give you a clear description of this structure, before I have passed in review those others with which it is associated. What I have now said, however, must suffice for the present, and I shall return to it in connection with the iris and choroid and lens. A few words remain concerning the *posterior epithelium of the cornea*, or the *epithelium of the aqueous humour*.

This is so extremely delicate and so perishable a layer, that it has only of late years been recognised, and yet it is very easily prepared for examination. It is a single series of flat epithelial nucleated particles, placed side by side, and united by their margins. Even in large animals the epithelial cells are not in a double layer. It is co-extensive with the posterior elastic lamina, which it separates from the aqueous humour. It would appear, however, from what has just been said concerning the conversion of the posterior elastic lamina at its border into fibrous tissue which in part passes through the aqueous humour to the iris, that this epithelium must cease with the elastic lamina, since there is no longer any stratum on which it can rest. I have not been able to discover the smallest appearance of it upon the pillars of the iris, and I conceive, therefore, that it is limited to the cornea.

I have called this the epithelium of the aqueous humour, because it is the only true epithelium which can be found in contact with that fluid. I shall have to show in a future lecture that the front of the iris has no true epithelial investment, and that the

front of the lens is also destitute of such a covering. It seems, therefore, incorrect to speak of the chambers of the eye as lined by a serous membrane, or of the aqueous humour as contained within a proper capsule; and I suppose that practitioners must abandon the name, at least, of that affection, which is now generally termed *aqueous capsulitis*, even if they continue to regard it as a distinct disease.

In my next lecture I shall proceed to notice some of the morbid states of the sclerotica and cornea; and shall endeavour to connect my remarks as far as I can with the anatomical, and, I fear, rather dry details, which I have had to dwell upon to-day.

Original Communications.

A COLLECTION OF FACTS ILLUSTRATIVE OF
THE

MORBID CONDITIONS OF THE PULMONARY ARTERY,

AS BEARING UPON THE TREATMENT OF
CARDIAC AND PULMONARY DISEASES.

By NORMAN CHEEVERS, M.D.

[Continued from last vol. page 409.]

ACUTE INFLAMMATION OF THE PULMONARY ARTERY.

ACUTE inflammation, arising spontaneously in an extensive tract of either of the great thoracic arteries, is a disease of by no means very frequent occurrence: still, for many years past, acute aortitis has been recognised as a malady of perfectly defined character; and it appears to have fallen to the lot of most recent morbid anatomists to observe cases in which it has been evident that a more or less active form of inflammation of the pulmonary artery was one of the leading morbid appearances discovered after death. Still, even at the present time, some of those pathologists who have observed the larger proportion of the instances in question, deny that the morbid changes discovered in the artery have been, in reality, due to inflammation of its tissues, regarding them as the results of mere passive coagulation of blood within the vessel, either consequent upon impediment to the pulmonary circulation, or produced by a morbid tendency to spontaneous coagulation in the blood itself. Cases have, however, occasionally, though rarely, presented themselves, in which it was evidently a matter of absolute certainty that the lesions discovered in this artery were the results of acute and very active inflammation. In other instances, the lead-

ing features of the disease, as well as the morbid appearances presented by the artery, have not assumed so definite a character as to render the inflammatory origin of the lesions perfectly indisputable: still, even in these cases, the probability has been altogether in favour of the belief that the disease was essentially one of inflammation. Apart from these, there occurs a third class of highly important cases, in which the lesions bear a considerable resemblance to those displayed in the previous instances, but in which there is every reason to believe that the adherent coagula and other morbid appearances discovered in the vessel have resulted mainly from obstruction to the pulmonary circulation, attended, doubtless, with a certain amount of inflammation in the over-distended vessels. In a fourth set, it is extremely difficult to ascertain whether any inflammatory action has been at work in the formation of the fibrinous deposits found in the artery: here, if inflammation has existed, it has evidently been of a transient nature, and of a far less distinct type than in those cases alluded to under the first class.

I shall endeavour to present a brief description of each of these classes of cases in succession; commencing with those in which the symptoms during life, and the morbid appearances discovered on examination, were evidently due to acute inflammation of the pulmonary artery: alluding first, for the sake of arrangement, to those instances in which the *branches* of this vessel were the principal seats of disease; reserving those in which the *valves* were seriously affected for a subsequent section.

The comparative immunity from disease of the right cavities of the heart and pulmonary artery, as compared with the cavities on the left side and the aorta, has long formed a matter of speculation to pathologists: and many ingenious conjectures have been advanced in elucidation of this difficult question. Corvisart attributed this difference to the more decidedly fibrous organisation of the valves on the left side. Bertin regarded it as an effect of the more stimulating nature of the arterial blood. A similar view has been adopted by Dr. Furnivall, who conjectures that, as the "fully elaborated arterial blood is the natural stimulus to the heart's action," this fluid, "highly elaborated, and rich as it is in stimulant material, may be rendered by disease more stimulating to the parietes of the cavities and canals through which it circulates than the venous would be to the right ventricle." Dr. Hope believed that a concurrent, if not a principal cause, is to be found in the greater pressure or strain to which the left valves are subject, in consequence of the superior contractile energy of the left ven-

tricle, and the greater weight of the arterial circulation. The correctness of this last opinion is strongly borne out by the fact, abundantly illustrated in the preceding chapters of this memoir, that, during intra-uterine life, while the right ventricle and its artery have a principal share in transmitting the blood through the systemic circulation, these parts are extremely liable to become the seats of disease and mechanical injury; while the left cavities and ascending aorta, to which, at this period, a much less active function pertains, comparatively rarely suffer from any serious lesion until after the direct communication between the right heart and one main systemic artery has been permanently cut off. It is probable, however, that here, as in the generality of nature's provident operations, the result is due not to a single cause, but to a combination of associated influences.

I am disposed to attribute the greater immunity from mechanical injury and disease of the right heart and pulmonary artery, in some measure to the comparatively yielding nature of their structures, the free reflux of which the tricuspid valve admits, whenever the ventricle is over-distended; and the great pliability and extensibility of the muscular, valvular, and arterial tissues,—circumstances which must all have an influence in rendering the parts less liable to mechanical injury upon occasions of obstruction and over-excitement. In a very large proportion of the cases of spontaneous mechanical lesion of the heart, the mischief is found to have occurred on the left side: the right cavities being more accustomed to obstructions, and being naturally more yielding, do not so readily suffer from undue distension. It is also highly probable that the cavities on this side of the heart are naturally more adapted to the reception of irritating fluids than are those on the left: as, in health, the former receive the highly carbonized blood from the veins, while the latter are accustomed to transmit only a perfectly depurated stream, so, in disease, a strongly azotised, or otherwise morbid fluid, may be conveyed with impunity by the right cavities, while it produces the most irritating effects upon the left. All are aware that pungent substances, which may be borne without injury on the mucous membrane of the interior of the lip, produce the most violent inflammation if applied to the conjunctiva of the eye; and yet it would be difficult to assign to this any other reason than that of necessity.

It has been already shewn that, in its structural characteristics, the pulmonary artery holds an intermediate position between the arteries and veins, possessing several of the characteristics of both classes of vessels; it is also observable that the acute diseases to

which this artery is liable, present, in many respects, the combined characteristics of phlebitis and arteritis; indeed, upon the whole, the morbid conditions of the pulmonary artery appear to be more nearly allied to those of the venous than to those of the arterial system. The general pathological laws which regulate the deposition of coagula in these vessels, and the circumstances which produce decolouration of their tissues, appear, however, to be nearly the same in both instances.

I believe that the only perfectly unquestionable anatomical evidences of the recent existence of acute arteritis, or phlebitis, are the presence of layers of fibrine, or portions of coagula closely adhering to the lining of tracts of the diseased vessels, together with an infiltration of their subepithelial tissues with a deposit of translucent fibrine, (an appearance which is, however, very rarely indeed observed either in the veins or in the pulmonary artery;) and lastly, a certain degree of reddish discolouration of the interiors of the inflamed vessels.

Morbid anatomists are accustomed to meet with four kinds of coagula in the cavities of the heart, and in the larger arterial and venous trunks: viz. (1.) Loose masses of dark crassamentum, filling the cavity or tube, but not adherent to its parietes: these may either be found in association with an inflamed state of the portions of vascular tissue with which they are in contact, or may be simply the results of the ordinary coagulation which occurs within a few hours after death. (2.) Soft masses or cords of yellow fibrine, of laminated structure, enclosing in their interstices so large a quantity of serum, that very slight pressure with the fingers is sufficient to reduce them to less than half their original bulk; these are usually attached to layers of dark coagulum, and are evidently formed subsequently to death. (3.) Laminated masses and cords of flesh-coloured fibrine, tough, elastic, free from serum, and compressed into the smallest compass, evidently by a strong condensing force; in fact, these coagula closely resemble portions of fibrine which have been squeezed in a cloth until their serum has been removed. When occupying the ventricles, they are generally found interlaced between the cords of the mitral and tricuspid valves. It is almost impossible to avoid the conclusion that these coagula have formed previously to the complete extinction of life, and that their condensation has been produced by the muscular contraction of the living heart. (4.) Patches, tubes, or masses of more or less decolourized coagula, opaque and friable, and closely adherent to portions of the lining membrane of the diseased cavity or vessel. Wherever deposits of this kind are found in any portion of the vascular

apparatus, the previous existence of an amount of inflammation sufficient to produce a complete alteration in the function of the lining membrane in those portions of the vessel to which the morbid deposit is attached, may be taken for granted. Each of these kinds of coagulum is liable to be found in the trunk and branches of the pulmonary artery, and a careful examination of their several distinctive characters will often prove the principal means of ascertaining the condition of the vessel previously to death.

It will here be necessary to offer a few remarks upon the red or purple discolourations so often met with in the pulmonary artery, as well as in other parts of the vascular apparatus; and which have been too exclusively attributed either to acute inflammation of the stained tissues, or to the post-mortem transudation of the colouring matter of the blood quite independently of any previous organic lesion. There are, doubtless, instances where reddening of the arterial and venous tissues occurs as a vital process; but the longer I have investigated the diseases of the blood-vessel system, the more I have become convinced that, in at least the larger proportion of cases, the florid steins which are frequently observed in the interiors of those vessels, whether arteritis or phlebitis has or has not existed, are the results of staining, or imbibition of the blood subsequently to death. It appears that the interiors of the large vessels are capable of receiving a red colour by vascular injection; but I feel assured that the discolourations in question are, in a vast majority of instances, post-mortem changes. Still it is important to observe that the pre-existence of inflammation or softening in the tissues renders them particularly liable to become stained very shortly after death. In fatal cases of typhus, erysipelas, phlebitis, &c. I have occasionally found the heart and entire tract of the arterial system deeply stained, even before the body was totally devoid of heat: this evidently depended upon the low crasis of the blood, and its rapid disintegration, as well as upon the deficient cohesion of the vascular tissues.

In extremely close and sultry weather, and especially where the quantity of fluids in the bodies is large, as well as in certain cases of sudden death, poisoning, death by lightning, &c. it will frequently be found that transudation of the colouring matter of the blood through the vascular tissues commences very shortly after life becomes extinct, quite independently of any previous structural fault in the blood-vessels themselves; but I think that, in the generality of cases, where, within two days after death, in cold weather, and under ordinary circumstances, the interiors of the large arteries and veins are found greatly discoloured, it may

usually be concluded that, although this appearance may possibly not be associated with any inflammatory lesion, it has resulted either from a highly vitiated state of the circulatory fluid, from impaired vital cohesion of the vascular tissues, or in consequence of both of these causes combined. It is well known that the disease which has been termed erysipelatous arteritis usually proves so extremely rapid in its fatal progress, as not to admit of the gradual deposition of adherent lymph or coagula upon the interiors of the inflamed vessels—whence the only morbid appearances presented by these canals after death, is intense discolouration, with or without a certain degree of thickness and softening of their inner tunics; appearances which it is, at present, scarcely possible to distinguish from the effects of ordinary decomposition. The microscope may hereafter be successfully employed in discriminating between these cases; but we are now capable of forming our opinion respecting their true nature only by connecting the appearances presented in the vessels with the symptoms observed during life.

Acute inflammation of the pulmonary artery has been found to occur under the following circumstances. (1.) As a sequence of phlebitis. (2.) In cases of morbus Brightii; and in persons habituated to intemperance. (3.) As a result of exposure to cold and rheumatism; and (4.) as an attendant of certain forms of pneumonia.

The existence of noxious and irritative matters in the blood of patients suffering from rheumatism, gout, scarlatina, typhus, and renal anasarca, as well as from that worst species of phlebitis in which purulent matter gains access to the general circulation, is now very generally admitted; and the injurious influence of fluids thus vitiated, upon the tissue of the vessels which convey them, often becomes strikingly displayed in those diseases. I have, in a previous essay*, discussed at considerable length the influence of humoral changes in determining the occurrence of acute inflammation of the arterial system. I shall therefore, in this place, merely state my conviction that, in a vast majority of instances, the idiopathic forms of phlebitis, endocarditis, and arteritis, are mainly due to vitiated and irritating conditions of the circulating fluid.

Inflammation of the large arteries has been by no means unfrequently observed in association with *Phlebitis*, and several cases have been recorded in which inflammation of a distant vein has been followed by the development of a similar morbid condition in the pulmonary vessels, associated with pneumonia, generally of the lobular kind, tending to the

* Guy's Hospital Reports, No. 13, "Observations on Acute Aortitis."

formation of circumscribed abscesses in the lungs. Some pathologists have been disposed to regard this train of morbid actions merely as the separate results of a diseased condition of the general system, producing a tendency to the coincident development in various parts of the body of certain destructive forms of inflammatory lesion. The truth of this view has certainly never been satisfactorily disproved: it is now, however, generally considered that, in cases of phlebitis, the arterial inflammation, and the suppurative disease of the lungs, liver, and other organs which usually accompanies it, are due to the entrance of purulent fluid into the blood—an accident which not only produces a most serious vitiation of the vital fluid, but is also believed to occasion an impediment to the circulation, by the lodgment of pus-globules in certain of the visceral capillaries, which are not of sufficient capacity to permit their transit. It is now satisfactorily proved that death may rapidly ensue where purulent matter is introduced into the general circulation, especially where the pus is derived from a foul or gangrenous surface: it has also been demonstrated that, in persons the subjects of phlebitis, who have died with symptoms closely resembling those presented by the animals into whose veins purulent matter was injected by M. Lebert, pus-globules could be detected in the circulating fluid. These facts, however, while they strongly favour the opinion that, here, the inflamed state of the vessels and internal organs results directly from the entrance into the circulation of a poisonous fluid from the diseased veins, do not by any means afford absolute confirmation to the ingenious hypothesis that the coincident occurrence of suppuration in the lungs or liver is due to the impaction of the absorbed pus-globules in the capillary vessels of those organs. Still, the idea is so feasible, and has received such strong confirmation from the experiments of the French pathologists, that we are by no means justified in treating it slightly.

In some fatal cases of phlebitis the inflammation is found to have extended, not only to the heart and pulmonary artery, but also to nearly the entire tract of the principal systemic arteries. In other instances, the vessels intervening between the original seat of mischief and the inflamed pulmonary artery do not present any very decided morbid change; and it would appear that there is another set of cases in which the pulmonary veins become intensely affected, while the pulmonary artery remains exempt from inflammatory change*. In a fourth class of

instances, inflammation of portions of the lungs and other organs may be discovered, the pulmonary artery, as well as the veins anterior to the primary seat of inflammation, having the appearance of being entirely free from all traces of acute disease.

[To be continued.]

26, Upper Stamford Street, Blackfriars,
October 1847.

ON
MORBID SYMPATHIES;
OR THOSE ASSOCIATED STATES OF DIS-
ORDER WHICH MOST FREQUENTLY
PRESENT THEMSELVES TO
THE PHYSICIAN.

*Being the Croonian Lectures delivered at
the Royal College of Physicians in
March and April, 1846.*

By JAMES COPLAND, M.D. F.R.S. Sec.

[Continued from p. 708.]

DURING the process of circulation, you are aware that, in consequence of the changes that take place in the chyle and blood-globules, of the absorption of chyle from the digestive canal, and of effete matters from the several tissues, considerable changes must necessarily take place in the blood, and as the result of these, that numerous phenomena must be produced in, and evinced by, the excreting organs—the skin, the lungs, the liver, the intestinal canal, and the kidneys. There appears to be a very intimate sympathy between the functions of these organs. Many years ago I had an opportunity of putting that subject to the test. Before I had completed my studies I was engaged in a number of experiments on the effects of temperature upon respiration and the blood in different states of the system, and the results of those experiments were published at the time. Afterwards, when visiting an unhealthy and warm climate, I had an opportunity of observing the changes produced by a change of climate; and of estimating the changes produced in the air by the respiration of individuals of the

p. 148), each relate a case in which phlebitis—in one instance of the uterine veins of a female recently delivered, and in the other of the basilio vein, which had been opened for the relief of puerperal convulsions—was followed by inflammation of the pulmonary veins. It is unfortunate that, in neither of these cases, is the condition of the pulmonary artery at all alluded to: but it is highly improbable that these very accurate observers could have overlooked inflammation of this vessel had it actually existed.

* Dr. R. Lee (Med. Chir. Trans. vol. xix. p. 44), and Mr. Adams (Dublin Journal, vol. xvii.

dark races. I found that during cold states of the atmosphere, and soon after digestion, the greatest changes took place in the blood; the greatest consumption of oxygen, and the greatest amount of carbonic acid then appearing in the expired air; while in a warm state of the atmosphere, and several hours after a meal, when the vital powers are oppressed, the smallest amount of oxygen was consumed, and of carbonic acid existed in the expired air; and these latter effects were most manifest when the system was subjected to the influence of malaria. It was also further considered, that the cutaneous function was, to a certain extent, supplemental to the function of respiration; that in fact, as observed in some of the lower animals, the cutaneous function is, to a considerable degree, one of respiration. This, even in the human species, appears to be the case, more especially as regards negroes. I made several experiments, in a very warm climate, on the respiratory functions of this race, and found that the quantity of carbonic acid given off from the lungs, in this variety of the species, was at least one-third less than that given off by the lungs of an European of the same size, and at the same temperature; whilst, in the former, the changes taking place on the cutaneous surface were greater in degree, and more extensive in kind, than in the latter,—the supplemental respiratory function of the skin of the negro being not only more remarkable as regarded the formation of carbonic acid and the exhalation of watery vapour, but also peculiar as respected the amount of animal matter and effluvium impregnating the exhaled vapour and watery fluid.

I attempted at that time to account for the prevalence of fevers, and disorders of the biliary functions, &c. so prevalent among Europeans migrating to a warm climate, by the state of the blood consequent upon the diminished changes produced by the air on the blood, and by the superabundance of the elements from which bile is formed existing in the blood; the liver thus for a time performing a vicarious action to the lungs,—the deficient function of the lungs, in an European in warm climates, being made up by the greater activity of the liver. However, this exists in individuals only for some

time after they arrive in a warm climate, and very frequently it is not so remarkable after a year's residence there. Active exercise also in a warm climate, by increasing the functions of respiration and cutaneous exhalation, remarkably relieves the increased function of the liver, and prevents many of the consequences of this disorder.

There is also a very intimate connection existing between the state of the blood and the depurating offices of the mucous surface of the intestines, especially of the large intestines. This surface, and more particularly the follicular glands, may be considered as eliminating from the blood much effete materials, and as thereby contributing, with the other emunctories, to the purity and healthy condition of this fluid. The connection subsisting between the functions of excreting viscera, not only as altering the condition of the blood, but also as affecting each other individually,—the influence which the state of one depurating function exerts upon the others, through the medium of the blood as well as through that of the organic nervous system, and the mutual and conjoint operation of all these functions, not merely in changing the physical appearances and constitution of the blood, and the states of vital influence, but also in occasioning structural alterations, are amongst the most important topics comprised by a rational system of pathology. Without due consideration being devoted to them, the morbid changes constituting the progressive periods of disease, the media of connection subsisting between affections of distant parts, and the passage of one alteration into another, cannot be traced; and the association of disease of one organ, with equal or even greater disease of another organ, cannot be explained, and neither anticipated nor guarded against.

It is of great importance to the physician to observe closely the *physical appearances* or sensible characters of the blood, when removed from the subject of disease, both immediately upon and some time after its removal. It is hardly possible for him to devote his attention to the analysis or *chemical constitution* of this fluid, inasmuch as this requires considerable time and diversified experiments to arrive at

satisfactory conclusions; and, besides, many of the changes observed are truly vital, or at least the results of departing vitality, and are either very imperfectly, or not at all, indicated by chemical analysis or tests, although frequently manifested by distinct physical characters.

The physical appearances of the blood, when removed from the body during the life of the patient, are of the utmost importance, as indicating not only the conditions of this fluid *per se*, but also the states of vital power; and as furnishing the chief indications of cure. My time will not admit of my noticing, otherwise than in very general terms, the principal alterations of the blood, which tend both to associate alterations of distant parts, and even to contaminate more or less the soft solids of the body. The perusal of what has been done by chemists, even down to the present day, to demonstrate the chemical changes of the blood, even in the advanced stages of disease, will furnish but little information which can be used practically, compared with attentive observation of the physical changes of this fluid. These latter changes I have fully described in another place (see article "Blood," in *Dictionary of Practical Medicine*), and therefore I shall not even briefly advert to them now, but merely notice two or three topics connected with the subject more immediately under consideration, some of which have not received sufficient attention from other writers.

Various changes as respects the colour of the blood, both at the time of removing it from the vein and afterwards, have been observed. The blood may present every shade of colour, from a pinkish hue, or a pale or florid red, to a deep red, or a brownish or dark red, or dark violet, or even to a brownish or black, or dark greenish hue. The first of these colours is observed chiefly in cases of anæmia; the latter of them in congestive diseases; and the last chiefly in pestilential or malignant maladies, or in cases of poisoning,—indicating not only a contaminated state of the blood, but also impaired organic nervous influence of the vessels and vital organs.

But it is not merely the colour of the blood, but also the rapidity and mode

of its coagulation, and the state of the coagulum, that require attention from the physician. The relative proportions of coagulum and serum; the firmness, or the flaccidity or softness of the former; the presence of cupping of the coagulum, or of the buffy coat, and the thickness and density of the buff, are circumstances which will be duly estimated by him, as indications of organic nervous energy or excitement—of states of vascular action and of vital resistance. He will, from these conditions of the blood, infer existing states of the whole vascular system, and of the organic nervous system as actuating the vascular,—viewing these conditions as the results of the states of these systems; and whilst he estimates them all at their true value, he will not attribute undue importance to any one condition apart from the rest. He will not, as in a case to which I was recently called, after taking away between thirty and forty ounces of blood, again take away nearly as much within a few hours, merely because the latter cupfuls of the former bleeding were cupped and buffed, and thus nearly destroy the patient; but experience will soon show him, if his education have not taught him, that, in inflammatory affections of serous or fibrous tissues, and in diseases attended by vascular excitement, without loss of vital power or resistance or infectious contamination of the blood, the fibrin continuing abundant, the coagulum may present these appearances to the last, and even although it may be relatively small to the amount of serum.

But, in different states of the organic nervous influence or vital power, and owing to these states either primarily or consecutively, the blood presents very opposite physical characters. It coagulates more rapidly and more imperfectly, or even hardly coagulates at all, or at least does not separate into a coagulum distinct from the serum. These characters are usually observed in depressed states of vital power and resistance, and in contaminated or poisoned conditions of the blood, and are owing either to absorption of contaminating and morbid matters, or to interrupted depuration by the several emunctories. In some malignant diseases characterised by extreme depression of vital energy, with a rapid state of the cir-

culution, the change in the appearances of the blood has been most remarkable and rapid in its accession. In the worst form of puerperal fever—a disease which I have seen go on to a fatal issue within twenty-four hours from its accession, and for which bloodletting was often most improperly and fatally employed, because it had been recommended by some dangerous because ignorant writers—the blood has, in some instances to which I was called subsequently to its abstraction, presented the appearance of a straw-coloured and very thin jelly, without any coagulum, the colouring matter being precipitated to the bottom of the vessel of a black hue, and in the manner of a powder which had been mechanically mixed in the fluid which had suspended it, and without the least cohesion between its particles. In these cases, as well as in some other maladies characterised by extreme depression of vital power, and a poisoned state of the blood, the coagulation is not only imperfect, but is of a peculiar kind; the colouring matter being detached from the other constituents of the blood almost as soon as the blood passes from the vein. The small amount of vitality possessed by the blood in these cases, is lost immediately upon its abstraction from the body; and the fibrin, although it may exist in tolerable quantity, is incapable of contracting or adhering so as to form a coagulum.

The quantity of blood in the system has also a very important influence in associating diseases of distant organs or parts, and this influence becomes still greater and more general if the blood either abound in excrementitious elements, or be in any way contaminated. The quantity of blood may be diminished as respects either the general amount, or the colouring constituents, or hæmato-globuline; and it may be deficient in a single organ. It is not unusual to observe in cases of general *atæmia* an irregular distribution of the blood, some organ or part experiencing an excess, whilst the diminution is still more remarkable in other parts. This is usually observed when, with *anæmia*, there exists local irritation, or excitement of the organic nervous influence of a particular organ. In this way distant parts often present consentaneous morbid phenomena, and the organ which has received to-day a

more than proportionate supply of that blood which is deficient either in general amount, or in colouring matter, or in fibrin, or in all these together, may present on the morrow more than usual deficiency; and thus a new combination of disorders may arise. This is not unusually met with in nervous, susceptible, and hysterical persons, in whom the distribution of blood is always more or less under the control of the nervous system, more especially the ganglial.

If the influence of these states of the circulation be remarkable in associating disorders of distant parts, that produced by the opposite state, or too great fulness, is not the less remarkable, more especially if the fulness be attended by an excess of effete or excrementitious elements. Vascular plethora, as long as the blood is duly changed by the emunctories, favours active determination to particular organs, especially to those liable to irritation or nervous excitement,—not infrequently also to acute inflammations and active hæmorrhages, according to the diathesis and the nature of exciting or concurring causes. But if excrementitious fulness supervene, owing to the imperfect discharge of some depurating function, as that of the kidneys, some distant organ is placed in great jeopardy, or effusion takes place in shut cavities, or in the cellular tissues. But these results may equally occur although the amount of blood in the system previously had been in due relation to the frame and state of the vascular system. It frequently is observed in practice, that a previously healthy person, in respect of his vascular system especially, is exposed to causes which arrest the cutaneous excretions, and he experiences a slight attack of fever, or local determination to some predisposed organ, or diarrhœa, or some other affection, especially if the kidneys have not performed a vicarious office in supplying the suppressed function of the skin. A healthy person also is exposed to causes, as infections, which depress organic nervous energy, and thereby impair or suppress the more important depurating and secreting functions. The consequences as respects the blood are obvious. This fluid soon abounds in effete and injurious elements, increasing both the amount of vascular contents, and oppressing and irritating the

whole vascular system, although certain organs may manifest these effects in a more prominent manner than others, until a salutary crisis is observed, and the morbid state of the blood is removed; or until the soft solids are changed, their vital cohesion is loosened, and disorganization ensues.

[To be continued.]

A FEW REMARKS

SUGGESTED BY THE CASE OF MARY HUNT.

By JOHN CHARLES HALL, M.D.

M.R.C.S.

IN the year 1841, in the *MEDICAL GAZETTE*, p. 248, in a paper headed "*Curious facts connected with Gestation*," I ventured to draw attention to the abominable state of our laws with respect to females pleading pregnancy as a bar to their execution. That the jury of matrons had nearly strangled the unborn babe, with its unfortunate mother, in the case of Mary Hunt, is now a matter of history—a black spot on the civilization of the 19th century. I am certain that the members of our profession will agree with me in thinking that there is frequently a no more difficult problem to solve, than in answering this question decidedly, in a case of suspected pregnancy in the earlier months of conception. The wise women of the metropolis could not discover that Mary Hunt was five months gone with child: they declared on their oaths "she was not quick with child," and the learned Baron, therefore, ordered "the law to take its course!" We tremble as we contemplate the fearful tragedy that was all but enacted: the drop, the beastly crowd, the strangled mother, and the innocent babe murdered in the womb, cannot fail to pass in rapid succession before us.

Although this case must lead to an alteration of the law, so far as the farce of the "jury of matrons" is concerned, it nevertheless requires also to be altered in another very important particular. What are we to understand by being "quick with child," in the sense in which the term is commonly used? The law of England considers the infant before quickening as *partio viscerum matris*;

as if the spark of life were not equally sacred from the moment of conception—as if each stage and process of gestation were unnecessary—as if the Almighty designer and maker of all things could order that which was useless, or fail to perfect that which he had commenced. To extinguish the first spark of life is a crime of the same nature, both against our Maker and society, as to destroy an infant, or a child, or a man; the regular and successive stages of existence being the ordinances of God, subject alone to his Divine will, and appointed by sovereign wisdom and goodness as the exclusive means of preserving our race; and Fonblanque very forcibly remarks, "*The law of the land is at variance with the law of nature, and it is at variance with itself; for it is a strange anomaly, that by the law of real property, an infant (en ventre sa mère) may take an estate from the moment of its conception, and yet be hanged four months afterwards, for the crime of its mother.*"

It is absurd to suppose for one moment that the fœtus does not enjoy vitality, in however low or small a degree, from the time of conception, and, as a matter of course, very long before the sensation of quickening is felt by the mother; and if it is asked why indications of life are not given before the time at which quickening is said to take place, the obvious answer is, that the absence of this sensation on the part of a mother, as regard the motion of her child, is no proof that it does not exist, for the young fœtus may, and in all probability oftentimes, move without the parent being able to distinguish such motions. In the paper before alluded to, a singular case, related by Dr. Montgomery, was mentioned, which I will here repeat, because it is very interesting. A married lady, who menstruated for the last time on the 10th of November, came to Dublin in March, and on the 21st of that month a consultation was held to determine whether she was labouring under malignant disease of the womb or not, "*as she had been previously assured that she could not be pregnant, because she had not sick stomach nor felt the child.*" On examination, Dr. Montgomery felt through the parietes of the abdomen the limbs of the fœtus in motion, as did also Dr.

Marsh and Dr. Cusack: and yet the lady herself had no consciousness whatever of any such sensation, nor did she "*quicken*" until the second week of the following month, (April). She was delivered of a healthy boy on the 2nd of August.

This symptom, called a quickening, which results from the motions of the child, and not, as was at one time supposed, by the sudden ascent of the uterus out of the pelvic cavity, is of very little use in determining the age of the fœtus, for in some cases the motions of the child, although unknown to the mother, could be felt by the surgeon, and in others women have supposed themselves to have quickened when not even with child.

We are deeply indebted to the medical press for bringing the case of this unfortunate woman before the public; to the press of England, which so strongly placed the matter before the Secretary of State, this fearful state of things, which had all but ended in the murder of an unborn babe, has been arrested. That some alteration of the law will now take place is certain, but in abolishing the ridiculous trial by a jury of matrons, and substituting an examination by proper medical men, let us hear nothing more about "*quick with child*"—let no danger be incurred by destroying a fœtus at any age, so long as our present sanguinary code remains in operation. May we not, however, hope that the time is fast coming when the uselessness of capital punishments will be universally admitted—when the drop, the rope, and the hangman, will only be taken about as the types of an age of barbarism that the sun of civilization has removed?

Grove Street, East Retford,
October 18th, 1847.

APOTHECARIES' HALL.

NAMES of gentlemen who passed their Examination in the Science and Practice of Medicine, and received certificates to practise, on Thursday, October 21st, 1847:—Frederick Farr, Dunstable—Charles Gage Brown, Portsmouth—Joseph Holmes Buxton, Bishop Auckland—John Fisher, Westminster—Henry Harris Muggesidge, Uxbridge—John Newton, Nottingham—William Bannister, Havant, Hants.

MEDICAL GAZETTE.

FRIDAY, OCT. 29, 1847.

THE subject of Sanitary legislation is now forcing itself seriously upon the attention of the legislature. The prospect of a visitation from the cholera, is doing more than the most strenuous arguments of the advocates of sanitary reform; and it is not improbable that this great question will become one of the first measures for the consideration of the new Parliament. Some excellent letters on the subject have already appeared in the daily journals from the pen of our correspondent, Dr. J. C. Hall of East Retford. In the following passage, the writer expresses in forcible language, the influence which the advance of the cholera is likely to exert in opening the eyes of the "*Filth of Towns' party*," as it has been appropriately named, to the danger of obstructing the progress of measures, upon which the health of town-populations so closely depends.

"After all, good may come out of evil; the fear of death may hasten on what ought to have been done years ago; and, if the fear of the cholera cause the effectual drainage of our towns, the removal of grave-yards, and every other source of pestilence from the midst of the abodes of the living, the mercy of God may turn a curse into a blessing. May we be wise in time—in the distance the black plague-cloud is already seen. On other less favoured countries the shower is now falling, and it will be too late for the inhabitants of England to awaken from their dream of fancied security when the storm has again burst upon them with all its fury."

The only section of the community which has as yet manifested any activity on this subject, is the medical profession. In lectures, pamphlets,

and numerous letters addressed to the daily and medical journals, they have endeavoured, but hitherto unsuccessfully to rouse the Government to immediate action. Among many creditable essays on sanitary reform, which have reached us, we have been particularly pleased with a pamphlet by Dr. Gavin.* It contains, in very clear and concise language, a full statement of the case for the "Health of Towns' party;" and, unless the facts be denied, we do not see how it is possible to resist the conclusion that a heavy responsibility rests upon those who allow the present opportunity to pass, without the introduction of a general legislative measure. Dr. Gavin first states the difference in the annual rate of mortality between town and country populations, as deduced from the Registration returns. This may be briefly stated, as—

In country districts	. 1 in 54
In town	" . 1 in 38
In England and Wales	. 1 in 46

Although, as it will be perceived, the mortality is thus excessive in towns compared with country districts, yet, in the opinion of the writer, the returns are open to many inaccuracies, and they understate the mortality of the metropolis. On this point his reasoning appears to be just.

"I am firmly persuaded that the real mortality of London is considerably higher than the apparent mortality shown in the returns of the Registrar-General, and that it is reduced by many of those persons who have lived in London to adult or mature age, migrating from it to the country, to protract their lives, and die in the country. Comparatively few of the middle and upper classes who inhabit London, die in London: a fact which may partly explain the appalling difference which will be shown to exist between the relative length of life

of the labourer, and of the shopkeepers, and gentry. A considerable proportion of that numerous class of persons who enter London between the ages of 15 and 35, and who serve to recruit its puny, feeble, and stunted population, do not die in London, but when they are attacked by disease, (and more especially by that lingering form of disease, to which the inhabitants of towns are peculiarly exposed, namely consumption), and when, consequently, they are unfitted for continued labour and their avocations, return to their homes in the country, there to terminate with their lives those diseases which, in truth, were caused or developed by a residence in the close impure air of a crowded, ill-ventilated, and worse drained city. A great number also of those who are born in London, and who become the victims of consumption, leave London in search of health, and die elsewhere. London, therefore, may be not unaptly compared to a regiment of soldiers, comparatively few of whom die while on the roll of the regiment, but are discharged when enfeebled, to return to their homes and die: their places are supplied by young and healthy recruits, who fill up the ranks thinned by climate and exposure."

Many persons approaching the metropolis from the country are struck with the dense canopy of smoke and vapour which hangs over it. Although not visible to the physical sense, there is in the midst of this canopy another sort of atmosphere—a pall of mortality to hundreds, who throng the closely-crowded lanes and alleys interspersed among districts abounding in wealth and splendour. The tables of the Registrar-General have enabled him to give a graphic description of this disease-mist:—

"The poison which causes death is not a gas, but a sort of atmosphere of organic particles, undergoing incessant transformations; perhaps, like malaria, not odorous, although evolved at the same time as putrid smells; suspended like dust, an aroma, vesicular water in the air, but invisible. If it were for a moment to become visible, and the eye could see it from a central eminence,

* Unhealthiness of London, and the Necessity of Remedial Measures, by Hector Gavin, M.D. &c. Churchill, 1847.

such as St. Paul's, the disease-mist would be found to lie dimly over Eltham, Dulwich, Norwood, Clapham, Battersea, Hampstead, and Hackney; growing thicker round Newington, Lambeth, Marylebone, Pancras, Stepney; dark over Westminster, Rotherhithe, Bermondsey, Southwark; and black over Whitechapel and the City of London without the walls. The district of St. Giles' would be a dark spot in the midst of surrounding districts; St. George's, Hanover Square, and St. James in Westminster, would be lighter than Marylebone and St. Martin's-in-the-Fields; part of the City of London within the walls would present a deep contrast to the City without the walls."

This description conveys a good hint to the Committee of the Health of London Association. A rough plan of the metropolitan districts, shaded according to the intensity of the mortality (the relative numbers being inserted), would convey in a simple form a better idea of the unhealthiness of London, than the mere verbal statements of pamphlets, which by the generality of persons are either not read, or, if read, are but imperfectly understood.* In this way the well-drawn picture of the Registrar-General might be made a tangible reality.

On the *causes* of the unhealthiness of towns we have the following excellent remarks by Dr. Gavin:—

"The causes of the high mortality of towns are traceable to the density of the population, to the want of ventilation and consequent impurity of the air; to the defective state of the paving, drainage, and sewage; to the filthy state of the dwellings of the poor and of their immediate neighbourhood; to the *concentration* of unhealthy and putrescent emanations from narrow streets, courts, and alleys; to the crowded and unhealthy state of the

workshops, and to the injurious occupations which are carried on in them.

"It is evident that after rain has fallen, all that portion which has been poured on the roofs of houses will drip down and soak into the ground, unless spouts, gutters, drains, and sewers, are provided to carry it off. It is also evident that all the rain which falls upon the ground must soak into it, unless it be paved, guttered, drained, and sewered.

"Now, in such cases, the rain-water having soaked into the ground, will settle into the soil, sap the foundations of the walls, render the floors damp, and fill the air with vapour. But besides the rain which falls, we daily bring into our streets, and houses, spring, well, and river-water, and animal and vegetable matters for food, and other purposes, of which matters a very large amount, and ultimately the whole, or nearly so, becomes refuse, and *must* be got rid of. Now, unless there be paving and drainage, with a good road-way impervious to moisture, not only the rain, but all the water used for washing, cooking, and manufacturing, however filthy it may have become, and all the refuse and excrementitious matter of every kind which is continually accumulating, (except so far as it may be removed by the offensive and degrading process of manual labour,) must be left to rot on the ground, and sink into the soil, liable to be stirred up anew, and brought to the surface, by every shower of rain, and ready to yield to the air warmed by each sun, and to every wind that blows, vapour charged with the seeds of disease and death.

"The most important agents, therefore, in producing a high rate of mortality in towns is the want of paving, inefficient street cleansing, and defective drainage and sewage. Now, what is the state of London with regard to paving, street-cleansing, drainage, and sewage?

"It is impossible to read the accounts contained in the Reports of the Commissioners of the Health of Towns, of the filthy and horrible state in which the houses and streets in the poorer localities are represented to exist, without being struck with amazement,—that, in a town, professing to be the centre of civilization, and the mightiest in the world,—such abomi-

* This plan has been adopted in France with respect to education. In a map of this kind which we have seen, those provinces in which education had reached a high standard, were represented white, and there was every shade to complete blackness, according to the amount of ignorance proved to exist in other provinces.

nations as everywhere present themselves should be allowed to exist even for a day. Yet, these reports are confirmed by the replies which have been returned to the inquiries made by the Health of London Association, and distributed all over London within the last few months. In these replies, received from every quarter of London, the filthiness of the metropolis is laid bare, and the state of the sewerage and drainage is declared to be most disgracefully insufficient. There are thousands and thousands of houses without drains, and multitudes of streets without sewers. In many parts of St. George's in the East there is no drainage, and the kitchens, in some places, after heavy rains, are stated to be several inches under water; which, when it recedes, leaves an accumulation of filth and dirt of the worst description.

"In the district of Hoxton and the parish of Bethnal-green, there are but few streets and houses having either sewers or drains."

Dr. Gavin was induced to inspect Lamb's Fields, in the Bethnal-green district, already described by Dr. Southwood Smith. This pestilential locality is traversed by the arches of the Eastern Counties Railway; and we are informed that for—

"A distance of about 230 or 250 feet, and from forty to sixty feet in width, was one enormous ditch or stagnant lake of thickened putrefying matter; in this Pandora's box dead cats and dogs were profusely scattered, exhibiting every stage of disgusting decomposition. Leading into this lake was a foul streamlet, very slowly flowing, and from it another, which widened and expanded into a large ditch before it disappeared in the open end of a sewer. Bubbles of carburetted, and sulphuretted-hydrogen gas, and every pestilential exhalation resulting from putrefaction, were being most abundantly given off from the ditches and the lake. The ripples on the surface of water occasioned by a shower of rain are not more numerous than were those produced by the bursting of the bubbles of these pestilential gases, which were about to produce disease and death. The construction of the

railway has diminished the extent of this lake, but it has *concentrated* the evil. Now the concentration of such foci of disease has been proved to be deleterious in a geometrically-increasing ratio. What, therefore, must be the effect of this lake of putrescency on the health and lives of those who shall inhabit the houses that are rapidly springing up all around it? A row of 22 new houses of two flats, with cesspools in front, are being built parallel to, and within 10 feet of this most disgusting and degrading scene, which is an abomination dangerous even to the casual inspector.

"Between Mape Street and Hague Street, Bethnal Green, there is a large and deep hollow, in the shape of an irregular triangle, with the sides measuring respectively about 130, and 100 feet. In wet weather this is a sort of pond; into it are thrown, at all times, the contents of the fish baskets, the heads and intestines of fish, and every possible kind of animal and vegetable refuse. In the hot and dry weather, in which I visited it, the surface had become exsiccated, and the nature of the filthy soil on which I trod was not readily perceived by the eye, but the sense of smell detected, in a concentrated form, the essence of putrefying odours, and the stomach heaved with nausea. At one end of this triangle, and on a level with its lowest surface, are two rows of houses, with open privies, and the soil oozing into a little ditch in the hollow."

We are not disposed to extend our quotations or remarks further at present; but, considering the difficulty which disinterested members of our profession often experience in placing the results of their observations before the public, even when their labours concern the general good, we shall take another opportunity of laying before our readers some additional details respecting the unhealthiness of London, which have been collected by the author of this pamphlet.

WE learn on good authority that some secret measures are being carried out in

Dublin, in reference to the Government scheme of awarding mechanics' wages for the services of educated and professional men. But for the support of three eminent members of the profession, the Government would never have had the boldness to propose five shillings a day as an adequate remuneration for attendance on fever cases: and here it is that we find the enemies of the profession are in the profession itself. If one man declines a Poor-Law appointment on the ground of its taking from, instead of adding to his means, another is instantly found who will incur the present loss for the hope of prospective profit! Three men placed by their professional position above the necessity of living by it, are found to sanction a most unjust and indefensible scale of payment; and they thus, to a certain extent, relieve the Government of the charge of acting with unfairness to the medical profession. If a body of men like the Irish College of Physicians can be found to confer honour upon those who have thus openly abandoned the interests of their brethren, Government may feel itself relieved of all responsibility in the matter; and a parliamentary discussion on the injustice of this mode of dealing with medical men, may be suppressed by the reply that it was the act of the profession itself!

Dr. Corrigan, it is well known, has lent his support to Government, and, on this question, he has voluntarily arrayed himself against a large majority of the profession in Ireland. He is in the Government ranks, and is fighting the Government battle; and therefore every movement with respect to him requires close watching. Some active members of the Irish College of Physicians, have selected the present time for proposing to confer on him the rank of "Honorary Fellow." As a physician and as

a man of professional eminence, he deserves the title; but we altogether dispute the propriety of conferring it upon him under present circumstances. From the information which we have received, we entertain no doubt that this is a deliberate plan on the part of some friends of the Government in the Irish College, to weaken the force of opposition to the measure which has rendered Dr. Corrigan so unpopular with his professional brethren. The experiment is to be tried on Monday next, and it remains to be seen whether this shameful abuse of privilege for party and political purposes, will be tolerated. We trust that there will be sufficient independence among the members of the College to shew, by their votes on this occasion, that they have a fellow-feeling with those who are struggling in the nominally lower ranks of the profession.

We regret to find that the good cause of the profession in Ireland, has been damaged by the desertion of Sir H. Marsh, the late President of the College of Physicians. After announcing his disapproval of the conduct of the Board of Health, and promising to preside at a meeting, for the holding of which he was one of the requisitionists, we are informed that, for some inexplicable reason, he suddenly changed his mind on the morning of the day on which the meeting was to be held: hence it was necessarily abandoned. He also refused to sign the Representation, although the Vice-president and nearly every member of the College attached their names to it. Notwithstanding these untoward occurrences, we still hope that there is a sufficient bond of union among those who are now maintaining the rights of the profession, to lead to the defeat of all the machinations which Governments and Colleges can secretly work against them.

We this week commence the publication of the Reports of the Proceedings of the London Pathological Society, in that authentic form which will render them of great interest and value to the readers of this Journal. These reports are drawn up under the immediate superintendence of the Council of the Society, and a special arrangement has been made, so that they may appear with regularity in our columns on the second Friday after each meeting. In these, and the Proceedings of the Manchester Pathological Society, authentic reports of which will appear monthly in the *MEDICAL GAZETTE*, we hope to present to our readers a valuable digest of the progress of pathological anatomy in this country.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN IN LONDON AND ITS VICINITY.

A HALF-YEARLY General Court of the members of this society was held at the Gray's Inn Coffee House, Holborn, on Wednesday evening, the 20th inst., Sir Charles Mansfield Clarke, Bart. in the chair.

It appeared from the minutes which were read, that between November and May last, twenty-two widows had received half-yearly grants at the rate of £35 per annum, nine widows at the rate of £30 per annum, three orphans at £25, and one at £20; that eight children had received smaller grants, and one widow a grant of £10 for immediate relief. Two new applications for relief had been received and attended to, and the Court of Directors had appointed a committee to consider whether the sums granted to widows and orphans might with safety be increased. A bequest of £100, by the late Dr. Kerrison, had been received, duty free.

A ballot then took place for the election of officers and directors for the ensuing year: Dr. Turner, late treasurer, was elected a vice-president, in the place of Dr. Mann Burrows, deceased; Thomas A. Stone, Esq. was elected treasurer, in place of Dr. Turner; and in place of the six senior directors, who retire in rotation, the following gentlemen were elected directors:—viz., Drs. George Burrows, and Ferguson; Messrs. Wormald, Lucas, Law, and H. Sterry.

Reviews.

Observations on some of the Parts of Surgical Practice: to which is prefixed an Inquiry into the Claims that Surgery may be supposed to have for being classed as a Science. By JOHN P. VINCENT, late Senior Surgeon to St. Bartholomew's Hospital. 8vo. pp. 364. Longman and Co., London, 1847.

"IN studying the habitudes of the human mind, from its full development to the close of life, we may observe in most men that, as life advances, the mind gradually recedes from the trouble of getting the materials of its contemplation from without, and individuals turn inwardly to survey and enjoy those intellectual fruits which have been the product of their own especial cultivation. He who would preserve himself from the hebetude of age, must in early life store his mind with truths which he himself has deduced. Youth may have its own blandishments, but age has also its comforts in reviewing the unfailling truths it has acquired in the progress of life."

The above remarks, contained in the introductory chapter of Mr. Vincent's work, while they convey an idea of the circumstances under which his surgical observations have been given to the world, are strongly suggestive of the reflective and practical character of the opinions which he has derived from his long and ample experience.

Mr. Vincent entered the profession at a period when the ultimate object of the surgical student's aspirations appears to have been simply to acquire and to carry out in practice the established dogmata of the schools—to adopt, with a religious and unhesitating faith, the opinions of the great medical law-givers of his day; to regard all generally-recognised doctrines as immutable principles; and, in fact, to assign to authority that reliance which is now conceded to observation alone. The contents of this volume must, however, go far to show that, if not originally in advance of his period, Mr. Vincent has long thrown off the absurd and slavish practice of forming a judgment of disease only through the medium of the opinions of others: he evidently deserves to be classed as a truly original observer, as one who has not been satisfied with exercising a

quick intellect and a retentive memory in the eduction of new facts, but who has constantly endeavoured systematically to bring together all those aids which science and reasoning afford for the ultimate analysis of the leading phenomena of disease.

In the introductory essay, prefixed to the larger and more practical portion of his work, Mr. Vincent has employed a great deal of good sense, combined with no small amount of metaphysical erudition, in setting forth the principles upon which surgery, in ceasing to exist as a mere empirical art, admits of being elevated to the position of a science, if not of the most exact description, certainly of the most exalted order. He argues, we fear too justly, that the practice of surgery is little more than a collection of opinions, unstable and fleeting, and generally prescribed by those whose position in the surgical society of the day gives them weight; that the knowledge required for such practice is heaped up, and cast, as it were, into the memory, and then any part is taken out separately as it may be wanted, and for a limited purpose, without any regard to all the conditions under which it may exist in relation with other things. This, he continues, cannot be called scientific practice: for the purposes of scientific practice the mind must be contemplative, and ponder on every step as it proceeds, in which way it institutes every means of making comparisons, of analysing conditions, and of studying the relations of disease; and the scientific man, knowing the foundation by which he is supported, reposes in confidence on the security of the plans he adopts. The fact is, that it is not the possession of all that is known in all the branches of the surgeon's profession, that necessarily implies that he is a scientific man, or that he practises scientifically. It is the scientific quality of his mind that enables him to give the character of science to that which he knows, by making those correct observations upon all the conditions and variations of things when presented to him, by which he can draw inferences, and adopt correct proceedings for the advantage of his patient.

It has evidently been with a strong persuasion of the truth and necessity of the above principles that the author

has wrought out the practical observations contained in the body of his volume. Like every other system of human invention, this mode of investigating diseased physical actions has evidently led the author, as it has frequently led others, into occasional errors and misconceptions; but, we do not hesitate to affirm, that we have scarcely ever met with a surgical work which displays so strongly as this does the immeasurable superiority of the enlarged plan of careful observation, which has for some years past been gaining ground among all classes of our profession, over the blind and narrow system of empirical practice which was adhered to for so many centuries by the great majority of physicians and surgeons.

Mr. Vincent's treatise is made up of a great variety of original observations upon most of the leading points of surgical practice. The author has not made the slightest attempt to arrange his details into anything approaching to a complete system: indeed, he has not even considered it necessary to divide his work into chapters or sections; it thus forms a continuous narrative, in which the change of subject is only marked by the commencement of a new paragraph: thus, an account of strictures in general, concluding with some remarks on stricture of the œsophagus, is succeeded by a few observations on sprains; at the conclusion of these, a description of the effusions of blood, which occur beneath the scalp in consequence of blows, gives place to a brief commentary upon the hæmorrhagic diathesis. Somewhat faulty as this mode of constructing a treatise undeniably is, it will not be found to have led, in this instance, to any confusion in the details,—the whole of which may be taken as a continuous series of illustrations of the great principle which the author is desirous to inculcate. Reference to the various subjects is facilitated by a sufficiently copious index; and perhaps, upon the whole, this plan of arrangement may have its advantage in leading the reader forward from subject to subject until, without having been allowed an opportunity of pausing, he has passed onward throughout the whole series of details. We think that we have already sufficiently alluded to the principle upon which the author's in-

vestigations have been pursued; we shall now content ourselves with quoting a few of the practical details, for the purpose of showing that his system of observation is by no means of a fanciful or visionary character.

A large portion of the treatise is devoted to the subjects of dislocation and fracture; the principles of the reduction and coaptation of these being chiefly based upon observation of the association of action in the muscles surrounding the injured part. The following quotation will afford a good example of the author's opinions and practice in, and with reference to, these cases:—

"I have said much of the system of motions that arise out of the combinations of muscles acting by consent, in relation to a centre of motion. This consentaneity of action is not only persistent and complete, whilst the muscles have this centre about which to act; but the moment they lose this centre, the association of actions is broken up, and new associations are begun to be formed, under new conditions. Thus, in luxations of six weeks' standing, we find nothing of that assistance which the muscles combine (in recent cases) to place in the service of the operator: in vain he makes his extension day after day, and fails if he conducts the traction from a fixed point. He must now make his extension from a moveable point, that may be capable of changing its place in a circuit of considerable amplitude.

"A case presented itself to me in which the humerus had been luxated seven weeks: extension was conducted in the usual way for a long time, and with the fullest force, and no reduction resulted. I then drew the limb across the chest obliquely, and by this means returned the head of the bone into the glenoid cavity with very little effort.

"A maid-servant fell down stairs and injured her shoulder: a practitioner living near was sent for, who was not aware it was a luxation. The mistress sent her to me at the end of six weeks. I saw the nature of the case, and took her to the hospital. I first tried the usual plan in vain. I then placed a thick body just in front of the axilla, and, by first drawing the arm down, and then carrying it across the chest over the body, the bone slipped easily into its place. The perfect use of the limb was ultimately recovered. Thus it is not by the force of extension, but by the adaptation of appropriate manipulation, that old cases are to be reduced." (pp. 27-8).

In the treatment of dislocations, the author places little reliance on the

efficacy of what are called constitutional means. He has seen a patient almost bled to death, and with no effect in facilitating the reduction of the luxation; and he has also known the administration of full doses of tartar emetic, without exciting nausea, and not at all administering aid to reduction. The warm bath likewise has been valueless in his experience. He adds, that in old dislocations these expedients are quite nugatory. In the latter opinion, the author will, we believe, not be altogether borne out by the experience of his contemporaries. Mr. Syme, of Edinburgh, especially relies upon the use of the warm bath in the reduction of old dislocations of the larger articulations.

The following remarks with reference to fractures of the radius and ulna deserve attention, but we trust that the rules which they enforce are not often neglected in the present day.

"It might be supposed that little new can be offered respecting fractures of the bones of the forearm. I have, however, two observations to make: the one is, that I have seen the greatest mischief arise from using bandages in this injury particularly, as, indeed, on many other occasions; the broken parts of the two bones having been pressed together, and so united that the limb has been made almost useless. All that is required are two splints, one on the inner and one on the outer side; but then, the chief thing to be observed, and which is very important, is, that the thumb should be kept quite vertical to the little finger. By this means the two bones are preserved in a parallel position, and the muscles in the interosseous space, both before and behind, have the best position for repose, and for the avoidance of pressure.

"There is one sort of fracture of the radius that requires particular notice. In falls, the hand is put out naturally to receive the shock. As this is done in relation to its position with the body, so the injury may be transmitted either to the shoulder or to other parts; but it often happens that the impetus is impressed on the ball of the thumb or extremity of the radius: this produces a fracture of the lower end of the radius in an oblique direction, commencing just about the styloid process, and extending inwards to the joint. This is a very painful injury, and not readily to be detected by anything like a crepitus. In general the hand drops downward, in respect of the natural state of the forearm. This fracture unites as readily as others, but it leaves great want of power to use the hand,

and very often much pain. Now I attribute those untoward states to the mischief so commonly produced when bandaging is adopted. If pressure be made use of, it is in that part of the radius where both the flexor and extensor tendons pass in grooves, in the lower end of the bone. They are involved in the slight inflammation and effusion of lymph consequent to this injury, and only require the injurious influence of pressure to become adherent to the surrounding parts, and then they are made useless in their functions, and probably the nerves going to the hand have the same cause for being affected. The apparatus that may be employed in this fracture should be so adjusted as to make no pressure over the broken parts of the radius. After a long time the hand is restored to its uses. I have observed a great proportion of women amongst those who apply with this injury." (pp. 36-7-8).

In cases of fracture of the lower extremity, the author recommends that the patient should be encouraged to bear upon the limb at an earlier period than is allowed by the generality of surgeons. He remarks:—

"I allow most of my cases to get a little about in three weeks. It occasionally will happen that the bones are tardy in uniting; sometimes the fibula will be the first to unite; and the tibia is left ununited; but, more commonly, the tibia is united first, and the fibula left ununited. If this state of want of firmness, or ununited condition, continues beyond the full time of usual recovery, I allow the patient to get up and try the powers of the limb. Mr. Hunter recommended this course, and accounted for the success that generally follows, by saying that it brought into action the stimulus of necessity. I conceive this is really an exemplification of that principle which I have laid down, which is the association established in the system between the muscles and bones of a limb. The strength of the bones has a relation to the action of muscles, and when the latter are increased in power, the strength of the former follows in order. The structures being obedient to the occasions of the functions.

"When the patient is in a condition to be allowed to use his limb, I think there is not the least occasion for crutches: they require that he should learn the art of using them, and when the time arrives to do without them, he has then still to learn to walk alone. The best, the surest, and the quickest way of learning to walk, is to enjoin him, as he sits, to rise occasionally, and bear the least he can upon the ailing leg; he will soon get on in this way to bear very tolerably upon it, and, having got power to

stand, while bearing on both legs, he should then manage to crawl or drag his leg round a table; and, when he can do this tolerably well, he will feel himself bold enough to launch into open space without having any thing to lean upon or assist him. On crutches, there are many combinations of muscles required which he has never had called into use. To learn again to walk without them is only to unlearn that which he has just got the habit of doing. In this way I have often seen a patient recover the ability of walking in a very few days after the commencement of the trial."—(pp. 78-9.)

The author is earnest in recommending the employment of the utmost caution in cases of wounds of the fascia; but we are disposed to think that most of the instances upon which his anxiety in these cases is grounded occurred in persons of depraved constitution; we should not be disposed to anticipate such dangerous results as the following in all cases of fascial wounds.

"In the slightest injuries of this part, the strongest injunction should be given that the limb should be preserved perfectly motionless. I have seen the point of a pen-knife, by falling out of the hand of the patient, and puncturing the fascia in so slight a way that he was careless about it, and walked as usual, afterwards lead to a lengthened confinement in bed. It has occurred to myself, after the removal of a bursa from over the patella, that the fascia of the thigh was invaded by the most violent inflammation, terminating in sloughing and extensive suppurations, with the most intense pain; altogether producing a state that endangered the life of the patient. I have been witness to a case in which death did follow the removal of an old bursa, the operation being quickly followed by inflammation of the fascia."—(p. 150.)

In extracting rather copiously from the most practical portions of this work, we have, in some measure, failed in doing justice to the highly scientific and reflective spirit in which nearly the whole of the subjects treated of in its pages have been discussed by the author: but we trust that we have said enough to convince our readers that a thorough perusal of its contents will amply repay those who, while seeking in the writings of others for valuable original facts, are desirous to improve and enlarge their means of personal investigation. Mr. Vincent's treatise is a work of sterling merit;

and will be received by the profession as a very important addition to surgical literature.

Tables for Students. By WILLIAM E. NOURSE, M.R.C.S. London: Churchill. 1847.

THIS is a praiseworthy attempt to lighten the labour of the student by bringing before him, in a condensed and easily accessible form, the divisions and subdivisions of the animal and vegetable kingdoms. One table is devoted to the Classification of the Vegetable kingdom, according to the Linnean and modern systems: two are devoted to the Animal kingdom, and a fourth represents the Elements with their Chemical Equivalents and Symbols. Besides the Symbols commonly used, Mr. Nourse has introduced those of Mr. Brande. This, however, was an unnecessary addition, as we understand that Mr. Brande has abandoned the use of the symbols which have hitherto appeared under his name. We recommend these tables as presenting many useful facts in a concise form; they are published at so low a price as to be within the reach of every student.

Elements of Chemistry, including the actual state and prevalent doctrines of the Science. By the late EDWARD TURNER, M.D. Eighth Edition. Edited by BARON LIEBIG and W. GREGORY, M.D. &c. Part II. Organic Chemistry: London. 1847.

THE opinion of the public and profession respecting the merits of this work is sufficiently evinced in the fact that it has reached the *eighth* edition. The Part of the work now before us, has undergone so many alterations and has received so many additions since the death of the author, that the title, "Turner's Chemistry," is becoming almost a misnomer. It is easy to perceive that in the preparation of this edition, the editors have taken every pains to include all that was new and useful in the science; and the reader will find here a complete epitome of the progress of modern chemistry. The examination of the volume, however, impresses us with the conviction that it is rather adapted for those who are advanced in the science, than for the be-

ginner. The long array of new organic acids, including the complex products of art in the shape of salts, is likely to frighten a student who can only devote to chemistry a very small part of his triennial period of study. As a book of reference this volume will be found highly serviceable to the advanced chemist.

Proceedings of Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Monday, Oct. 18, 1847.

Dr. WILLIAMS in the Chair.

Mr. CORFE exhibited a series of eight oil paintings, illustrative of the physiognomy of disease as affecting the cerebral, thoracic, and abdominal regions.

Dr. HUGHES exhibited a specimen of *Perforating Ulcer of the Stomach, communicating through the Diaphragm with an Abscess in the Lung.*

The patient, æt. 36, was admitted into Guy's Hospital, Sept. 15, 1847, having previously for two or three years been a patient in the Dispensary at Nottingham, of which place she was a native. She suffered then from dyspeptic symptoms. A month prior to admission into Guy's she was suddenly seized with severe pain in the abdomen, described by her as having attacked her heart, and passing round the ribs on the left side. She lay with her knees elevated, and a very anxious expression of countenance. A general fulness of the *acrobiculus cordis* was detected on manual examination, accompanied with great tenderness on pressure, supposed to arise from peritonitis, the probable result of some perforation of the stomach or intestines. Owing to her great debility, opiates and fomentations were the only measures had recourse to.

On admission into the hospital, she was greatly emaciated; pain and vomiting after eating; tenderness on pressure at the epigastrium. At the end of a fortnight she complained of pain in the left side of the chest, with cough, and dirty foetid expectoration. A low form of pneumonia and breaking up of the lung was diagnosed. A few days before death, Dr. Addison, to whose care she had now passed, discovered the curious and rare sound, of the heart beating against and agitating a cavity containing fluid and air, which sound Dr. Hughes had previously described as resembling that of a spoon beating some viscous fluid, as milk or

treacle. A gangrenous cavity was hence diagnosed. She died a few days afterwards. The inspection was made twenty-six hours after death. The right pleura and the lowest lobe of the corresponding lung presented a slight sprinkling of tubercles, none existing in the apex. A little sero-purulent fluid in the left pleura; upper part of left lung healthy; the entire lower lobe airless, solid, and friable, and of a dirty red colour, and containing a cavity as large as a pullet's egg, without lining membrane, of a slate colour, having several vessels, the larger of which were permeable, occupying the parietes, and lying loose within it. The broken-down structure within was foetid and gangrenous, and the base of the lung adhered intimately to the diaphragm. The abdominal parietes were united to the contained organs by old membranous adhesions. The large and small intestines having been removed, a large-adherent mass was observed, consisting of the stomach, spleen, left lobe of the liver, left renal capsule, pancreas, part of the diaphragm, and the lower lobe of the left lung. On slitting up the larger curve of the stomach there was observed (independent of extensive ulceration of the mucous membrane near the pylorus) a clear circular ulcer, the size of a half-crown, quite through its coats, and which had closed at a former period by adhesion of its edges to the left lobe of the liver. A valvular opening was situate at the upper edge of this ulcer, leading to a sinus bounded to the right by the liver, left by the spleen, behind by the pancreas, and which communicated through several ulcerated openings of the diaphragm with the gangrenous cavity in the lung.

Dr. OGIER WARD exhibited a specimen of

Digestion of the Stomach after Death.

The patient, æt. 1 year and 9 months, came under Dr. Ward's care as a Dispensary patient, after suffering three weeks from diarrhoea. At that time she had prolapsus ani, which exhibited the mucous membrane raw with ulceration, and the stools were so incessant that the fæces seemed to pass in a constant dribbling. She took the breast only for her food; but, after a week's treatment, the diarrhoea was much lessened; and though emaciated to the last degree, yet her general appearance improved so much that he had great hopes of preserving her life, and desired she might have some beef-tea, but she would not take it. Two days after, she sank, without any fresh attack, apparently from exhaustion.

The inspection was made thirty-six hours after death. There were extensive ulcerations of the great and small intestines, particularly about the cæcum over Peyer's glands. The liver was a pale yellow, appa-

rently from absence of blood, of which very little existed in the whole body, which was quite blanched. The stomach contained a black fluid, like coffee-washings, which ran out through a hole at the cardiac extremity which the finger had made in trying to raise the stomach, in order to open and examine it. Traces of the fluid are still to be seen upon the surface which has been acted on by the gastric fluid. The peritoneal coat alone was perfect, and the submucous cellular tissue appears to have preserved its integrity after the muscular layers beneath had been dissolved.

Dr. PRACOCK exhibited a specimen of
Malformation of the heart; consisting in contraction of the orifice of the pulmonary artery, and free communication between the cavities of the auricles by the foramen ovale.

A young man, 20 years of age, by trade a pipe-maker, was admitted into the Royal Free Hospital on the 20th of May. He was delicate-looking, but stated that he had enjoyed good health till two years before. Since that time he had been declining in strength, and had suffered from cough, difficulty of breathing, palpitation, and pain in the left side of the chest. He was occasionally observed to be somewhat livid in the face, and had expectorated a considerable quantity of blood six weeks before. He had never had rheumatic fever. When admitted into the hospital he was much emaciated; his face pale, and the expression of countenance anxious. The lips were slightly livid; the fingers long, and a little clubbed at their extremities, and the nails incurved, and somewhat dark-coloured. He had urgent dyspnoea, and a severe cough, and expectorated a large quantity of mucopurulent fluid. The pulse was quick and feeble. The sternum was prominent, and its lower end was directed towards the left side, so as to occasion a decided projection of the third, fourth, fifth, and sixth left cartilages, and a corresponding flattening of the opposite side. Beneath the clavicles the chest was flat, and imperfectly resonant on the right side, and fuller and more sonorous on the left. The respiratory sounds were masked by subcrepitant and mucous râles. The liver was considerably enlarged. The præcordial dullness commenced above at the level of the third left cartilage, and extended transversely from the right side of the sternum to beyond the line of the left nipple. The impulse of the heart was felt over a large portion of the front of the chest, and was attended by a loud murmur audible over the whole dull space. This murmur was most intense immediately below and within the line of the left nipple, and there the second sound was entirely masked

by it. It was also heard very loudly below the sternum and nipple, and thence towards the middle of the left clavicle. At the top of the sternum it was less distinct, and of shorter duration, so that it was followed by a clear second sound. To the right of the lower part of the sternum, there was heard first an imperfect systolic sound; this was followed by, or lapsed into, a short murmur, which was again succeeded by a clear diastolic sound. A purring tremor was felt in the præcordia. During the time the boy was in the hospital he continued to sink gradually, and died eleven days after admission. There was no anasarca.

On examination of the body the brain was found healthy, but the skull presented a very marked example of the unequal growth of the two sides often observed in ricketty children.

The right lung was extensively permeated by tubercle, and, towards the apex, contained several small cavities. There was much solid tubercle in the left lung. The bronchial mucous membrane was reddened, and the tubes contained much muco-purulent fluid.

There was a considerable amount of serum in the cavity of the pericardium, and the attached membrane was, in several places, covered by rough and thick patches of old lymph. The heart was situated more towards the left side than usual, and the right ventricle was turned forwards, so that it occupied the whole exposed part of the organ, while the left ventricle was entirely situated posteriorly.

The heart was of large size, and weighed 12 oz. avoird. The valves at the orifice of the pulmonary artery were adherent together, so as to form a complete diaphragm extended across the opening into the vessel, and perforated by an irregular triangular aperture in the centre, of sufficient size to admit the passage of a lead pencil. This membrane was protruded forwards so as to project into the cavity of the vessel, and displayed three ridges marking the former points of separation of the valves, with deep sacs between each. Around the aperture there was a ring of small vegetations. The right auricle and ventricle were greatly dilated, and their walls hypertrophied; the walls of the right ventricle measuring, near the pulmonary orifice, four French lines in width. The muscular substance was unusually firm. The right auriculo-ventricular valves were natural. The foramen ovale was so imperfectly closed by its valve as to allow of the passage of a ball measuring three French lines in circumference. The Eustachian valve was of large size. The left auricle and ventricle were, relatively to the right cavities, small in capacity, and the walls of the latter of moderate thickness, and

flaccid. The aortic and mitral apertures and valves were natural. The ductus arteriosus was impervious. The liver, spleen, and kidneys were of large size. The glands of Peyer, in the ileum, displayed small tuberculous depositions, and, in places, commencing ulceration.

Dr. Peacock remarked that he had not, during life, formed any very decided opinion as to the nature of the cardiac affection in this instance; though, from the history of the case, and the character of the physical signs, he was inclined to infer that there existed regurgitation through the mitral aperture. The dissection afforded an explanation of the error into which he had fallen; the heart having been found situated further to the left than usual, and the right ventricle being thrown forwards, so that the pulmonic orifice assumed a very similar position to that ordinarily occupied by the left auriculo-ventricular aperture. The free communication between the cavities of the auricles, and the competent state of the right auriculo-ventricular valves, also sufficiently explained the absence of any permanent turgescence or pulsation of the jugular veins.

The case was further interesting from the confirmation which it gave to the theory which ascribes the production of cyanosis to congestion of the venous system. From the great contraction of the orifice of the pulmonary artery, and the large opening in the foramen ovale, it was evident that but a small proportion of the blood circulating in the systemic vessels could have been transmitted through the lungs; yet the degree of lividity observed was very slight. In this respect the case corresponded with others which are recorded, in showing the want of just relation between the amount of venous blood entering the general circulation, and the degree of cyanosis. It was probable that the diminution of the whole amount of blood, with the progress of the phthisical symptoms under which the patient sank, might, by lessening the degree of venous congestion, have rendered the cyanosis less decided during the last periods of the boy's life. The lividity was certainly less shortly before death than when he was first seen about a month before.

Dr. BARLOW, in answer to a question from Dr. Ramsbotham, remarked that he had met with two cases, in which he believed a communication had taken place through the foramen ovale after it had been closed. In the first case, which was one of chronic bronchitis, and where death took place by apnoea, a large pouch was found directed from the right to the left auricle, presenting three small orifices. In the second case, which was one of severe catarrh, cyanosis suddenly supervened a few

days before death. The lungs were found tubercular and consolidated from inflammation, and there was an opening, with a ragged edge, at the valve of the foramen ovale.

Dr. COPLAND was disposed to think that narrowing of the orifice of the pulmonary artery frequently followed endocarditis—a disease not uncommon in newly-born and very young children, and which gives rise to the constriction of serous surfaces.

Dr. WILLIAMS exhibited a specimen of *Extensive Hypertrophy and Dilatation of the Heart, with Ossification of the Mitral Valve.*

The patient, a man between 30 and 40, had been subject to many severe rheumatic attacks prior to his admission into the University College Hospital. The examination of the chest indicated dulness, and impulse extending over a breadth of eight inches from one mamilla to the other, and a length of seven inches and half from the midsternum to below the epigastrium. The jugular and superficial thoracic veins pulsated strongly, and a systolic murmur was audible over the thorax, particularly loud and harsh in the epigastrium, and at the bottom of the sternum. The beating of the apex of the heart was less defined than usual, but was strongest a little to the left of the epigastrium. Symptoms of extreme embarrassment of the respiration and circulation ensued, and pulmonary apoplexy was diagnosed. On the post-mortem examination, the right lung was found very dark, and partially congested; the corresponding pulmonary artery presenting a large fibrinous coagulum deprived of colouring matter, adherent to the vessel on one side, and soft in the centre. In the left lung were several masses of pulmonary apoplexy, and extreme general congestion. The heart was enormously enlarged, its position corresponding with the signs during life. The muscular structure of the right ventricle was mottled with pale spots, which, under the microscope, exhibited an abundance of oil-globules, and an absence of the usual fibrils. The apex was composed equally by the right and left ventricle, and lay nearly in the middle of the thorax, being only a little to the left of the epigastrium. There was considerable dilatation of both ventricles, especially the right, which occupied the whole front of the heart; the tricuspid orifice much dilated: and the laminae of the mitral valve being quite consolidated by bony deposit projecting into its structure.

Dr. WILLIAMS remarked, that the peculiarity of the case consisted in the mitral regurgitant murmur being heard considerably away from its usual position, which he

explained by the fact of the right ventricle so displacing the left that no part of the latter approached the thoracic parietes, except at the apex, and this by the globular form of the organ was brought much lower and further to the right than usual.

Dr. PEACOCK exhibited a specimen of *Malignant Disease of the Forearm (accompanied with casts).*

Six months ago the patient's right hand was forcibly turned backwards upon the forearm by a cart-wheel. Some slight swelling occurred at the time; this subsided in two or three days, and he returned to his employment. Two months after, a swelling began to develop itself on the ulnar side of the wrist; it continued to increase for a week, when he was admitted to St. Bartholomew's Hospital. He remained there three weeks, and then left at his own request. Subsequently he placed himself under the care of his parish-surgeon, who twice lanced the swelling,—blood, he says, coming each time. It continued to increase up to the time of his admission, (under the care of Mr. Wakley, Jun.), into the Royal Free Hospital, September 4th. He was then suffering most intense pain in the arm; the tumor extended from the hand to the bend of the elbow; there was decided fluctuation: and a grooved needle being introduced, a rather dark coloured, but perfectly fluid blood, oozed out; the point of the needle could be moved about as though in a cavity. There was no pulsation of the ulnar artery to be distinguished, but the radial was, although somewhat displaced by the swelling, beating naturally. There was no pulsation in the tumor itself; the superficial veins were greatly distended. He was a spare, but generally healthy man; 75 years of age. The secretions were all in good order. Except a very red tongue, and the pain (which was very severe), he had no constitutional symptoms of disease. For nine days the arm was gently bandaged, and cold was assiduously applied. Opium relieved the pain. At the end of that period, the circumference of the swelling having increased the half of an inch, Mr. Wakley, with the concurrence of his colleagues, tied the brachial artery. Pulsation in the radial at once ceased: the temperature of the arm was well sustained. Three days after the deligation of the artery, the lancet wound made before he came into the hospital began to slough around its edges, and to protrude from it some pale cellular tissue: there was a gradual extension of the sloughing process to the whole of the flexors in the front of the forearm (with the exception of the pronator teres and flexor carpi radialis), and eventually they were all cleared away, exposing the two bones and their inter-

aceous membrane. Some clots of blood were observed to come away with the slough. For two or three days healthy granulations appeared, but on the 2d of October a nodulated spongy growth began to make its appearance upon the bones at the upper part of the forearm; these increased daily. Hæmorrhage, to the extent of two and three ounces, occurring every twenty-four or thirty-six hours, induced Mr. Wakley to propose removing the limb lest the patient should die from its effects. Being in good spirits, and taking his food well, the forearm was removed on the 14th: the patient not having previously consented to the operation.

18th.—He is taking his food tolerably well; sleeps after an opiate; the stump is doing admirably; healing by first intention. The two casts, although rough, are true; that without the hand being the condition of the arm after he had been in the hospital a few days before the artery was tied; the other being taken after the arm was removed.

Some of the blood was examined under the microscope before the operation, and nothing but blood and pus-globules were to be seen. In the examination of the forearm, the middle of the ulna was found denuded of periosteum, the superior part being occupied by a cerebriform tumor, extending downwards and outwards in the course of the radius to within an inch of the wrist-joint. The upper part of the swelling was mixed up with a large quantity of coagula of blood; the lower part had a true-brain-like appearance, was intimately connected with the periosteum, and had the usual characteristic microscopic characters. The lunar bone was in a state of partial necrosis, and there was about an ounce of pus beneath the flexor tendons in the palm of the hand.

Mr. J. BIRKETT exhibited some specimens of

Strumous Disease of the Testicle.

1. Specimen from a patient æt. 27, who died, June 21st, of pleuro-peripneumony, pericarditis, and granular degeneration of the kidneys. Both testicles affected with scrofulous deposit within the tunica albuginea, between the tubuli semimiferi.

2. Specimen from a man, æt. 59, who died, Sept. 13th, from the depressing effects of erysipelas: the heart weak, sub-arachnoid effusion. The testicles much larger than natural; both contained strumous deposit within the tunica albuginea and between the tubuli, in detached points; in the right testis the tunica albuginea was of a firm, almost cartilaginous, hardness; in both, the tunica vaginalis testis, and reflexa, were more or less adherent.

3. Specimen from a patient æt. 26, a strumous delicate young man: he had had

gonorrhoea twice; first at 14 years of age. He states that he was perfectly cured of these complaints, but that some months after the cure of the last, the left testicle began to swell, and was painful; he states further, that at this time he had no venereal complaint, and attributes the testitis to severe bodily exercise. He applied fomentations and leeches, and after suppurating, the testicle at last became quite well; this occurred between 9 and 10 years of age.

Last April the left testicle began again to swell suddenly, and after the first day he could not walk; suppuration commenced after six weeks, and at last a long sinus was formed, extending from the inferior part of the scrotum upwards and backwards behind the epididymis. This testicle had always remained larger than the right, from the time of the first attack: he had never received any blow upon the organ. Mr. Cooper, under whose care the patient is in Guy's Hospital, and who has permitted me to show the specimen, removed it on Tuesday last; the patient is going on very well.

The deposit will be found scattered throughout the organ, both in the body and epididymis; the tubuli were very indistinct, and besides the strumous deposit there appeared to be much, also, of an inflammatory origin.

Mr. NATHANIEL WARD exhibited a specimen of

Stricture of the Oesophagus, terminating by ulceration into the trachea.

The specimen showed a narrowing immediately below the base of the cricoid cartilage, so as only to admit the introduction of the tip of the little finger, and here the mucous membrane formed a kind of valvular fold. Immediately below this strictured portion of the oesophagus, the continuity of the canal was represented by a large dilated sac, extending 2½ inches as far as the bifurcation of the trachea; the walls thickened and irregular; the mucous membrane absent, and the surface studded with irregular nodules of soft cancerous deposit; the anterior aspect of this sac, or that part in immediate relation with the posterior aspect of the trachea, presented two apertures opening into the latter. The superior admitted nearly the tip of the little finger, the inferior allowing the middle to pass readily into it; between the two openings an intervening piece of membrane ¾ of an inch in length. The posterior extremities of the 4th, 5th, 6th, 7th, and 8th rings of the trachea on the left side eroded and exposed, and projecting into the cavity of the sac; there was condensation of the cellular membrane of the oesophagus outside the diseased portion, giving it a bulging appearance, more evident on the right than on the left, but not so great as to

protrude the skin, and which protrusion, consequently, was not evident during life; glands thickened outside, and soft, like tubercle, presenting on microscopic examination large irregular granular cells, with one or more nuclei.

The patient, a chemist, æt. 50, had come under Mr. Ward's care about nine months ago, with symptoms of stricture of the œsophagus, which had existed for about twelve months. For the space of three weeks he derived relief from the use of the bougie; the last time, however, the instrument was used, the ejection of blood and subsequent continued pain led to the inference of the malignant character of the affection; mechanical interference was consequently dispensed with, palliative treatment merely being adopted. The dysphagia gradually increased, and in the beginning of July he was seized with a violent attack of dyspnoea, and incapability of swallowing, each attempt being immediately followed by violent spasmodic cough, and the ejection of fluid taken into the pharynx; the voice was reduced to a whisper. He sank in ten days; beef-tea injections, morphia, and the constant chewing of ice,—from which he derived great relief,—formed the treatment.

Dr. COPLAND remarked that he had met with a similar case twelve years ago, there being, however, no stricture.

The meeting adjourned to November 1st.

MEETINGS OF MEDICAL SOCIETIES APPOINTED FOR THE ENSUING WEEK.

Westminster . . .	Sat. Oct. 30, 8 P.M.
Guy's Physical . . .	" " " "
Medical . . .	Mon. Nov. 1, "
Pathological . . .	" " " "
Chemical . . .	" " " "
Hunterian . . .	Wed. " 3, "

SUPPOSED CAUSE OF TINNITUS AURIUM.

THE warning which many epileptics have, viz. a singing noise in the ears, I believe arises from the dilated carotid artery vibrating in the carotid canal, close to the vestibule of the internal ear. I regard it as analogous to the throbbing produced by the dilated artery in an inflamed part.—*Solly on the Brain.*

DR. MIQUEL.

LATELY at Nice, Dr. Miquel, formerly editor of the *Bulletin de Therapeutique*.

Medical Intelligence.

CONVENTION OF POOR-LAW MEDICAL OFFICERS.

THE meeting of medical officers of Poor-law Unions, which had been already announced in this journal, took place at the Hanover Square Rooms, on Wednesday the 27th inst. There were present about two hundred gentlemen who had come from various parts of the kingdom, and had been deputed to represent many others who were unable to attend.

The chair was taken by Dr. Burton, of Walsall. Having stated the objects of the meeting, Mr. Daniell, of Newport Pagnell, moved the first resolution:—

"That medical men charged with attendance on the poor are required to be thoroughly and practically acquainted with every branch of their profession: that they are liable to be called at the shortest notice, and without assistance, to treat the severest form of disease, and the most formidable injuries which every species of accident may produce, as well as to attend the most difficult and appalling cases which obstetric practice can present. That in the discharge of these duties they have not only to contend with the anxieties inseparable from such weighty responsibility, but are brought into situation the most trying and repulsive, not only from the multiplied annoyances which attend them, but from concentrated contagion and other causes of disease, to which many of this valuable class of men have been victims; that the sacrifice of time, labour, and rest, which they are required to make, is great and unlimited; and that the pecuniary expenses necessarily incurred in visiting their patients and supplying the means of relief are often unavoidably heavy. That, in addition to these trials, inherent to their office, there are others of a moral character very liable to be concomitant with them, and of a kind most painfully to affect minds of a highly honourable and sensitive class, to which it is sufficient merely to allude. That the mode in which these services are required to be performed, and the scanty remuneration awarded to the medical men engaged in them, constitute a grievance which cannot be too strongly stated, and for which redress should earnestly be sought. That in many instances the number of persons amongst whom the casualties of disease and accident may occur, and the area to be traversed in visiting the patients, are so great as to render early, constant, and satisfactory attendance physically impossible. That the pecuniary remuneration being granted on no fixed principle or scale, varies greatly in

different localities; but that in almost all it is so disproportionately small, and in very many of them falls so far short of the expense incurred, as to render a large portion of the medical relief bestowed on the sick poor a tax on individual members of the medical profession, instead of resting, like clothing, food, and other forms of relief, upon the ratepaying parishioners in general."

After the mover and seconder of this resolution had addressed the meeting in very sensible and appropriate speeches on the inadequacy of the salaries paid to medical officers of Unions, and the injustice of throwing the charge of attending the poor on members of the medical profession, Mr. Tasker, of Melbourne, moved—

"That the medical relief at present provided for the poor must be faulty and inadequate as respects both the patients and the public, is the necessary consequence of the errors which have been pointed out as inherent in the system itself. That though an immense amount of unrequited professional assistance is afforded, the limits of physical capability, and of pecuniary resources, preclude medical officers from the possibility of giving prompt professional assistance in many instances. That it results from these defects in the system that patients who might, by early and efficient treatment, be quickly cured or relieved, and placed in a situation to support themselves and their families, may become a charge on their parishes for aggravated sickness and burial, or for protracted relief to themselves and their families. That the extra expense is not confined to that which might be made apparent from the parish books, but tends to swell the sums expended in hospitals, dispensaries, orphan asylums, and other institutions, besides an invaluable amount of individual charity."

The meeting was afterwards addressed by Mr. Cantrell, Mr. White, Mr. Ebsworth, and Dr. Webster; and it is only want of space, in consequence of the late period of the week at which the meeting was held, that prevents us from giving a full report of the speeches of these gentlemen.

Some appropriate remarks on the unreasonable conduct of Boards of Guardians were then made by Mr. Lord, of Hampstead, who moved—

"That this Convention pledges itself to seek, in the most persevering but temperate manner, the redress of the grievances which have been set forth; that for this purpose a subscription be raised, and a standing committee be appointed to collect and digest information on the subject, to memorialize the Secretary of State for the Home Department, and the Poor-Law Commissioners, and to communicate with the College of Physicians, the College of Surgeons,

the Society of Apothecaries, the Provincial Medical and Surgical Association, and the National Institute of Medicine and Surgery, in order to obtain the active co-operation of those bodies. That the committee be empowered to reassemble the convention, and to take such other steps for the promotion of the object confided to it as it may deem expedient, and it do consist of a certain number of gentlemen [the names were read], with power to add to their number."

The resolutions were carried unanimously, and the meeting terminated at half-past six o'clock.

MORTALITY IN ENGLISH PRISONS.

THE appendix to the second report of the Surveyor-General of Prisons (which was recently issued by order of the two houses of Parliament) contains a statistical table, showing the average mortality in ten of the principal English prisons. The table shows that in the Coldbath-fields prison there were 11,482 prisoners in confinement there in 1841-2, while in 1845-46 there were only 9,016. In the former year the number of deaths was 24, and in the latter only 7. In Kirkdale prison there were 2,524 prisoners in 1840-41, when there were six deaths; while in 1845-46 there were four deaths among 3,041 prisoners confined there. In Wakefield prison there were 16 deaths among 3,619 prisoners therein, while last year there were only two deaths among 3,041 prisoners, and in 1843-44 no deaths among 3,583 prisoners. Again, in Salford prison, in the year 1841-42, there were 11 deaths among 6,211 prisoners; and in 1845-46, only three among the 4,703 inmates. In Westminster there were three deaths among the 5,133 prisoners in 1840-41; and in 1845-46 the deaths were nine in number among the 12,940 inmates. In Liverpool prison there were 582 confined there in 1840-41, and eight deaths; in 1844-45 there were 495 prisoners, and five deaths. In Lancaster Castle (122 prisoners in 1845-46), in Preston (156), Knutsford (230), and in Derby (132), prisons, there was one death in each during that year. The proportion of deaths per 1,000 per annum in these various prisons varied to a remarkable extent. Thus, in the Westminster prison, in the year 1843-44, the proportion of deaths was no less than 24·93 per thousand (the highest amount of mortality in the table), while in the Wakefield prison, in 1843-44 (where there was more than half that number of inmates), there were no deaths during the year. The other cases of the highest mortality occurred in Coldbath-fields prison, in 1840-41, when the proportion of deaths was 22·9 per thousand; in Wakefield prison, in 1840-41, 23·7 per thousand; in

Westminster, in 1842-43, 21·0 per thousand; in Liverpool, in the same year, 21·1 per thousand. In all the gaols enumerated the proportion of deaths has decreased of late years, showing the effect of improved systems introduced therein.

THE CHOLERA IN RUSSIA.

LETTERS from St. Petersburg of the 5th state on the authority of the official reports received by the Government, that the cholera continued to advance towards the north and east. Cases of it had occurred at Orel, at Toula, and even in the village of Penna, situated at only 50 leagues from Moscow. In the province of Astrakan, in which there were 31,300 inhabitants, 5,915 cases had occurred, and 3,131 deaths. The disease still raged with great severity at Tchernom-Jarsk, and in the environs. At Saratoff, the capital of the province of that name, 2,500 persons had been attacked, 1,991 of whom died. In the country of the Cosacks of the Don there had been 12,651 cases, of which 7,017 terminated fatally. At Charcow 53 persons had been carried off, and on September 15th there were 588 sick at Kursk. At Woronesch, a town with a population of 44,000, the cholera broke out on the 4th of September, with 420 new cases, and 150 deaths had occurred daily. On the 16th, there were 1,019 persons ill of the cholera in the hospital, 418 of whom were attacked on the same day. The number of deaths on that day was 152.

CHLORINE AS A DISINFECTANT IN CHOLERA.

In a recent No. (p.688) we inserted an extract from a letter to the *Times*, written by Mr. Herapath, on the alleged beneficial properties of chlorine in destroying the contagion of cholera. The inexpediency of making the daily journals a medium for communications on scientific subjects, is, we think, strikingly shown by the following letter, which has since appeared in that journal:—

"To the Editor of the *Times*."

"SIR,—Your paper the other day contained a letter from Mr. Herapath, who has kindly published the result of his experiments as to the most efficacious remedy against the infection of cholera. Would he be kind enough to add whether the oxide of manganese is to be obtained of any ordinary country chymist, and also what quantity of it would be sufficient for use at one time? He also intimates that clothes may be injured in their colour by the use of the chlorine gas. Would there then be risk of the furniture in a house being spoiled by fumigation,—the paper on the walls, &c.?"

"I imagine that in all cases of infectious disease this chlorine gas would be a safe disinfectant. If this letter should elicit a reply

from Mr. Herapath, it might confer a benefit on many who are perhaps as inexperienced as myself.

"A COUNTRY CLERGYMAN."

The simplicity of this letter is really amusing. Here is a gentleman who proposes to disinfect his house upon a large scale, while at the same time he does not appear to know chlorine from black oxide of manganese! Without any suspicion of consequences, it is obvious that he is quite prepared to incur the risk of suffocating his wife and family, and destroying his furniture, &c.: and by the last paragraph of his letter we apprehend that he would try his destructive experiments upon the lives and property of his parishioners. In the first place, we do not believe that chlorine has the slightest power of destroying the contagion of cholera: it removes certain foul smells, and thus indirectly tends to remove the foci of contagion, but there is no proof that it acts in any other way. But there can at the same time be no doubt that it is a very dangerous agent to place in the hands of those who are not fully acquainted with its properties. To say nothing of its destroying and damaging most of the articles of furniture in a house, a very small quantity received into the lungs may do much injury, giving rise to cough, by spitting of blood, and other bad symptoms. In the hands of persons so inexperienced as the "Country Clergyman," it is impossible to say what amount of mischief might not be perpetrated, before he could be cured of his enthusiasm on the subject. We trust, therefore, for the sake of his wife and family, his domestic furniture, and his parishioners, he will be kept in the same state of happy ignorance in which he is at present. Even if chlorine possessed the disinfectant properties which it is alleged, it would, we believe, be unsafe to trust it in the hands of those who are not well acquainted with its properties.

THE EMIGRANT FEVER IN CANADA.

THE number of deaths which occurred in this city during the month of September last was 248. Of this number 216 died in the emigrant-hospital, and 32 in lodging-houses in the city. There were sent to the emigrant-hospital, 682; residents sent to the general hospital, during the month of September, 30; sent to the convalescent-hospital, 314; widows and orphans sent from convalescent-hospital and various parts of the city to the asylum provided for them, 15.

ROYAL COLLEGE OF SURGEONS.

GENTLEMEN admitted members on Friday, Oct. 15th, 1847:—T. H. Tuke, C. B. Wilson, E. H. Owen, J. M'Nicoll, W. C. Kelsart, H. J. Waterland, H. D. Benwell, and R. Branwell.

LONDON HOSPITAL MEDICAL SOCIETY.

Presidents.—Dr. Frampton; John Adams, Esq.; T. B. Curling, Esq.; D. Hovell, Esq. (General Practitioner).

Council.

On behalf of the Hospital Staff.—Frederick Cobb, M.D.; W. J. Little, M.D.; Herbert Davies, M.B.; George Critchett, Esq.

On behalf of the General Practitioners.—S. H. Ward, M.D.; T. Mee Daldy, Esq.; H. Bloomfield, Esq.

On behalf of the Students.—P. Gowland, Esq.; Joseph Nash, Esq.

Treasurer.—W. Cumming, Esq.

Secretaries.—N. Ward, Esq.; John W. Tripe, M.D. (General Practitioner).

OBITUARY.

OBITUARY NOTICE OF THE LATE JOHN MORGAN, ESQ.

JOHN MORGAN, Esq., late surgeon to Guy's Hospital, whose death we recorded in the MEDICAL GAZETTE on the 8th instant, was born at Stamford Hill, on January 10th, 1797. His father, William Morgan, for many years held the actuaryship of the Equitable Insurance Office, a situation to the present time filled by his son Arthur. William Morgan was a native of Glamorganshire, where, we believe, the family have for centuries had some territorial possessions. Having received his general education at home, the subject of the present brief memoir commenced his professional studies, at the age of 16, as an articulated pupil of the late Sir Astley Cooper, at the then united schools of St. Thomas and of Guy; and having passed the period of pupillage, conjointly with Mr. Key, performed the duties of demonstrator of anatomy at a private school in the immediate vicinity of the hospitals. He obtained the diploma of the Royal College of Surgeons in 1818 or 1820; and in 1824, at the early age of 27, was, on the retirement of Messrs. Foster and Lucas, elected at the same time with Mr. Key, his coadjutor in the dissecting room, surgeon to Guy's Hospital. For the first year of their appointment Sir Astley Cooper was their colleague, the vacancy occasioned by whose resignation was supplied by Mr. Bransby Cooper. The lectureship upon surgery at Guy's Hospital, was for many years in part filled by Mr. Morgan, who, however, of late, confined himself to the delivery of a course of ophthalmic surgical lectures; he was elected a member of the Council of the College of Surgeons in 1843.

Mr. Morgan paid much attention, when first established in practice, to the subject of comparative anatomy, in connection with

which may be mentioned the circumstance that he undertook the dissection of the elephant shot in a rabid state at Exeter Change, (numerous anatomical preparations from which, with many others of value, the works of his scalpel, are deposited in Guy's Museum,) and made one of the best collections of stuffed birds ever formed. Advancing in practice, and having his leisure time more occupied in the domestic circle, Mr. Morgan disposed of this collection, and it is now preserved at the University of Cambridge—we believe in the Fitzwilliam Museum.

As a surgeon, Mr. Morgan was distinguished beyond many of his early contemporaries for the attention he bestowed upon medical surgery; a subject now more cultivated, but only a few years back treated with much neglect. He was careful to investigate, and remedy if needful, the constitutional condition of his patient, and, except on emergencies, evinced a wholesome tardiness in resorting to the knife; yet he was a bold, unflinching, and enterprising operator.

The reputation of a hospital-surgeon as a good operator is most justly founded upon his execution of the manipulations of ordinary occurrence: cases of hernia, lithotomy, of amputation of limbs, or removal of tumors, of restoration of lost or marred features, constitute the fittest, because the most frequent and important tests of the operator's ability. Judged by criteria such as these, Mr. Morgan deservedly acquired distinction as one of the best operators in London: discriminating in judgment, ready in contrivance, intrepid and cool, yet skilful and rapid in action, he won both confidence and admiration; yet more, he achieved success. But his conduct in routine practice did not constitute Mr. Morgan's only claim to celebrity as an operator. In the earlier period of his career, several cases of more than common difficulty and responsibility established his reputation beyond question. Thus on two or three occasions he removed considerable portions of the lower jaw; several times he tied the external iliac artery; and in one instance performed this latter operation where remarkable obesity and a large inguinal hernia on the same side as the aneurism formed most embarrassing complications. Ligature of the artery was, however, successfully completed, and the patient was still living a short time since. This operation, it is to be remembered, had not at that time become recognized as one of ordinary occurrence, and the same observation is even more applicable to ligature of the carotid. A case, in which Mr. Morgan tied the carotid, was one of highly vascular nævus, bordering on, if not actually amounting to, aneurism by anastomosis: the

diseased structure occupied one entire side of the face, and had previously been treated by ligature supported by crossed pins, and even the actual canterly. These plans having proved unavailing, it was thought right (bearing in mind Mr. Travers' successful case of a similar kind) to arrest the supply of blood to the morbid growth by obliterating the common carotid. The patient underwent this formidable operation accordingly, and recovered from it; but, unhappily, the expected benefit did not ensue.

In cases of amputation of limbs or the breast, Mr. Morgan pursued with much advantage the practice of maintaining gentle pressure (by the hand of an assistant or nurse) over the wound for some hours after the operation, pressure being then superseded by the application of a soft warm poultice. Troublesome oozing of blood is prevented by this pressure as satisfactorily as by insertion of a sponge in the wound, and both the pressure and subsequent poulticing are productive of great comfort to the patient, and materially conducive to union by adhesion.

To the late Mr. Morgan, supported by the discerning approbation of the Treasurer of the hospital, is mainly due the credit of establishing the Guy's Eye Infirmary, which for many years, affording relief to thousands, has supplied ample evidence of the value of that analogical consideration and treatment of ophthalmic disease which Mr. Morgan zealously inculcated and successfully practised. Under his auspices the Infirmary reached its present importance; and a multitude, recipients of its benefits, might justly address him as the instrument of their convalescence, with the grateful acknowledgment—

*"Tu mihi curarum requies, tu nocte vel atra
Lumen!"*

To turn to Mr. Morgan's literary productions. They were not numerous, but valuable, and stamped with marks of the sound judgment and vigorous intellect of the author. Of his contributions to the Transactions of the Linnæan Society (of which he was elected a Fellow) the writer of this hasty memoir does not feel himself competent to speak; but the investigation of the modus operandi of poisons, undertaken in conjunction with Dr. Addison, gave occasion to a publication wherein the pains-taking experimentalists display acumen of no common kind, and considerable argumentative power. The work, which appeared in 1829, forced itself upon the attention of toxicological philosophers and the profession at large, but cannot be said to have set the debated question entirely at rest.

In a lecture on tetanus, published in 1833, at the request of his pupils, Mr.

Morgan gave a graphic description of this sad malady, and introduced to general notice the probability of an antidote being discovered in the Ticunas, or wourali poison of the North American Indians—a substance productive of muscular paralysis when placed within a wound. Tested in some of the lower animals, it seemed to exercise a controlling power over tetanus and certain analogous affections; but we are not aware that any medical man has hitherto ventured to employ it in the human subject, although struggling with a notoriously fatal malady.

Mr. Morgan was not a large contributor to the Guy's Hospital Reports, and confined his communications to two or three of the earlier numbers. His principal work of later years was a volume of Lectures on Ophthalmic Surgery, published in 1839, the value of which was fully proved by a rapid sale, inasmuch that it has now been long out of print. In truth, the perspicuous style, unimpaired by the condensed character of the work, rendered it a real boon to the student: in it he found, as in the author's oral lectures, this special branch of surgery divested of the overwhelming burden of a licentious nomenclature, and restored to its proper position of affinity and correlation with general surgery. For the student the book was intended,—to the student it was addressed. It did not appear with the title of "a system" of ophthalmic surgery: it did not profess to comprise a digest of others, as well as a rationale and compendium of the author's practice: that which it purported to contemplate, it efficiently accomplished, and left the critic, who would disparage, an involuntary witness to the able completion of the undertaking.

Mr. Morgan married, in the year 1831, Miss Anne Gosse, of Poole, in Dorsetshire; and for the last seven or eight years resided at Tottenham, maintaining a professional residence in Finsbury Square, to which place he had removed from Broad Street Buildings. It was but a few weeks before his death that albuminuria necessitated his removal from the active duties of the profession; dropsical effusions took place at an early period of the complaint, and on the 4th of October he expired, in the 51st year of his age.

The premature close of this estimable surgeon's career has created a widely-felt blank. His professional talents were universally acknowledged; the confidence he inspired and enjoyed was great; the gratitude his unobtrusive beneficence won, concentrated from many sources. In public life admired and respected, in private beloved, Mr. Morgan sank beneath a gradual and almost painless malady, the surely fatal termination of which it was his melancholy advantage from the first to foresee. Hoc,

felicitis solatium, postremo dicere liceat; quod (Dei ut speramus gratia), Illuminatus, confortatus, fide Catholica in Ecclesie Anglicanæ gremio obdormivit.

RESTRICTION ON THE SALE OF ARSENIC.

As many sad catastrophes have been caused by the use of arsenic inadvertently taken for flour, in addition to the use made of it for the commission of crimes, it is proposed by the Council of Salubrity of Paris, that all persons who, whether for the destruction of vermin or otherwise, keep arsenic on their premises, should mix with it Prussian blue, to change the colour, and *sau somica*, the bitterness of which would immediately cause the presence of arsenic to be detected by the taste of that ingredient.

* * This is assuredly a step in the right direction on the part of the French government, and a good example for our own to follow. The uniform pretence for purchasing arsenic is, to poison rats, while the secret intention is to poison human beings! A small quantity of Prussian blue and *sau somica* cannot interfere with the lawful, while it may be occasionally a great obstacle in the way of the unlawful use of this poison. It has been absurdly objected that the colouring of arsenic could be no protection, because the poison might be given in strongly coloured liquids! There are, at least, from twenty to thirty deaths yearly, owing to arsenic being accidentally and innocently mixed with flour or some colourless article of food: it would appear, therefore, by this preposterous objection, that until we can defeat all the plans of crafty murderers it is better not to take the slightest trouble to diminish the number of accidental deaths from this poison!

BIRTHS & DEATHS IN THE METROPOLIS During the week ending Saturday, Oct. 16.

BIRTHS.	DEATHS.	Av. of 5 Awt.
Males.... 620	Males.... 471	Males.... 528
Females.. 634	Females.. 483	Females.. 518
1254	955	1046

DEATHS IN DIFFERENT DISTRICTS.

West—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	136
North—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 366,303)	163
Central—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	179
East—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 393,247)	316
South—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich .. (Pop. 473,460)	299
Total	955

CAUSES OF DEATH.

ALL CAUSES	958	Av. of 5 Awt. 1046
SPECIFIED CAUSES	949	1039
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	309	311
<i>Sporadic Diseases, viz.—</i>		
2. Dropsy, Cancer, &c. of uncertain seat	81	104
3. Brain, Spinal Marrow, Nerves, and Senses	117	157
4. Lungs and other Organs of Respiration	234	232
5. Heart and Bloodvessels	24	34
6. Stomach, Liver, and other Organs of Digestion	91	74
7. Diseases of the Kidneys, &c.	14	9
8. Childbirth, Diseases of the Uterus, &c.	21	14
9. Rheumatism, Diseases of the Bones, Joints, &c.	9	7
10. Skin, Cellular Tissue, &c.	4	2
11. Old Age	46	65
12. Violence, Privation, Cold, and Intemperance	14	29

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	20	Convulsion	31
Measles	56		
Scarlatina	55	Bronchitis	27
Hooeping-cough	15	Pneumonia	44
Dysentery	31	Phthisis	113
Typhus	93	Dis. of Lungs, &c.	11
Dropsy	17	Teething	8
Sudden deaths ..	7	Dis. Stomach, &c.	10
		Dis. of Liver, &c.	12
Hydrocephalus ..	20		
Apoplexy	15	Childbirth	21
Paralysis	15	Dis. of Uterus, &c.	0

REMARKS.—The total number of deaths was 93 below the weekly autumnal average. The mortality from typhus fever is on the increase.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	29.74
“ “ Thermometer	54.9
Self-registering do. max. 91.3 min. 38.5	
“ in the Thames water — 55.5 — 54.	

a From 12 observations daily. b Sun.

RAIN, in inches, .05: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 5.9° above the monthly average.

NOTICES TO CORRESPONDENTS.

Mr. C. W. Bell, Manchester.—The paper has been received, and a private communication will be sent.

P. N., a Medical Assistant.—We cannot undertake to promise the insertion of any paper which we have not seen.

The communications of Dr. King and Mr. Pooley will be inserted, if possible, next week.

The length of Dr. Copland's paper, which would not admit of division, has compelled us to postpone the continuation of Dr. Hare's Cases of Aneurism, &c. until the following number.

We have also been obliged to postpone the Report of the Westminster Medical Society.

Lectures.

LECTURES

ON THE

DISEASES OF INFANCY AND
CHILDHOOD,

Delivered at the Middlesex Hospital.

By CHARLES WEST, M.D.

Physician-Accoucheur to, and Lecturer on Midwifery at, the Middlesex Hospital, and Senior Physician to the Royal Infirmary for Children.

LECTURE XIV.

Collapse of lung that has once been expanded—described as lobular pneumonia by various writers—its characters—symptoms and differences from true pneumonia.—Observations of Bailly and Legendre.—Is not to be regarded as a post-mortem occurrence.—Illustrative cases.—Instances of its occurrence in the adult.—Similar causes tend to produce it at all periods of life—hence very frequent in old age.

Induration of the cellular tissue—its characters—remarkable reduction of temperature that attends it—appearances after death—condition of deficient expansion, or of collapse of the lung, noticed by many observers, though misunderstood by most, is probable cause of the induration, or œdema of the surface.

THE condition of the lungs which we were occupied in examining at the last lecture is of importance, even if regarded merely as a congenital state, the result of nature having failed in the attempt to establish respiration, and to fit the child thoroughly for the new mode of existence to which it is destined after birth. But its claims on our attention are still greater when we bear in mind the possibility of its occurrence in consequence of a variety of causes operating after birth, so that lungs once permeable to air may cease to admit it, and death at length occur from apnoea without any serious structural change having taken place in the organs of respiration.

Appearances supposed to be the result of pneumonia had long attracted the notice of writers on the diseases of children, by the wide differences which they presented from those which inflammation of the lungs gives rise to in the adult. It had been observed that infants and children under five years of age often died after presenting some of the symptoms of inflammation of the lungs, such as cough and difficult breathing, to-

gether with more or less extensive dullness of the chest on percussion, and some or other of the auscultatory signs of solidification of the lung. In such cases these peculiar morbid appearances were especially well marked. But while they seemed to prove that these changes in the lung were the consequences of pneumonia, it happened not infrequently that the fever and the pneumonic symptoms underwent a great abatement before any sign of approaching death appeared, or that children who had seemed to die worn out from various causes, and during whose lifetime no indication of inflammation of the lungs had existed, presented the supposed anatomical evidences of pneumonia in a most remarkable degree. The frequency of occurrences of this kind led to the assumption that pneumonia was an extremely frequent concomitant of almost all the diseases of infancy and early childhood, that this pneumonia was very often latent, (that is to say, that it did not manifest its existence by those symptoms which usually attend it,) and lastly, that owing to causes which were differently stated by different observers, it gave rise to alterations in the lung, very dissimilar from those which it occasioned in the adult.

One of the most remarkable peculiarities of this supposed infantile pneumonia led to its receiving the appellation of *lobular pneumonia*, as expressive of the fact, that it did not attack a large tract of lung, or the whole of a lobe at one time, but that it affected isolated lobules, which might be seen of a dark colour, solid, often depressed below the surrounding parts, and sinking in water if detached from the healthy tissue in the midst of which they were situated. Sometimes the affection was strictly limited to a single lobule, the boundaries of which could be exactly traced; and though it oftener happened that a cluster of lobules was thus hard, and dark, and solid, still there was no gradual shading off from the darker to the lighter parts, so that it was evident that in whatever way the disease extended, at any rate it did not advance by mere continuity of tissue. Sometimes almost the whole of one lobe was thus affected, a few lobules only still retaining a healthy aspect, and crepitating under the finger, and it often happened that the bronchi leading to it were full of mucus or pus, while at other times there was marked congestion of the lung, and in the midst of the congested tissue were two or three solid hepatized patches. All these circumstances, as it may be conceived, variously modified the morbid appearances. In the last case the lobular pneumonia was thought to be becoming *generalized*, or, in other words, the inflammation originally limited to certain lobules was supposed to have begun to extend

to the adjacent tissues, constituting a kind of transition-state between lobular and lobar pneumonia. The lower edge of the different lobes, the whole of the middle lobe of the right lung, and often a very considerable portion or the whole of one or other lower lobe, were also sometimes found in a state to which, among other names, that of *carnification* was applied, on account of its close resemblance to a piece of muscular tissue. A portion of carnified lung showed the closest possible similarity to a lung that had been compressed by effusion into the pleura. It was dark, tough, solid, contained no air, presented a smooth surface when cut, yielded a small quantity of bloody serum when pressed, and, indeed, seemed almost like a piece of flesh, in all which respects it resembled a portion of lung hepatized by lobular pneumonia, and differed from the lung of the adult when that has been rendered solid by inflammation.

The course of the disease in many of these cases during the life-time of the patient, and the results of medical treatment, tended to enhance the difficulties which the above described anatomical peculiarities placed in the way of referring lobular pneumonia to the same category of affections with the pneumonia of the adult. Venesection, leeches, and mercurials, the ordinary antiphlogistic apparatus in the pneumonia of the adult, often appeared to hasten the child's death; blisters rarely effected any good, and the blistered surface often shewed a remarkable indisposition to heal. On the other hand, emetics and rubefacients were frequently of service; a stimulant plan of treatment was almost always necessary at an early period, and sometimes seemed to be required almost from the outset of the affection. The rapidity of the changes that took place in the physical condition of the lung was another point which seemed to render the nature of the affection still more obscure; for where air was heard entering freely on one day, none would be perceptible on the morrow, but percussion of that part of the chest would yield a sound of complete dulness. On the other hand, it happened sometimes, though much less often, that dulness was succeeded just as quickly by resonance on percussion, and that breathing became distinctly audible, where on the previous day no sound of air was to be heard.

Nothing can show more forcibly the influence of a name, than the fact that this condition of the lungs should have been described by all writers as lobular pneumonia, and that its symptoms should have been attributed to inflammation, while yet it was evident from the concurrent testimony of every one that neither in its progress nor

in its results was it similar to inflammation of the lungs in the adult, much less identical with it. Having, however, once been called pneumonia, every person continued to call it so, though often with a full recognition of its peculiarities. Even the close resemblance which the lung presented to foetal lung, or to those undilated portions which are characteristic of *atelektasis*, was noticed and discussed by myself, and by many far better observers, apparently without a suspicion that both states were identical.

But while the peculiarities of lobular pneumonia were thus generally commented on, it seems strange that no one should have had recourse to the experiment of inflation in order to obtain a solution of some of the difficulties that existed with reference to its nature. This oversight seems the more extraordinary, when we call to mind that this very means had cleared up so many doubts concerning appearances in the lungs of newborn infants, which had once been supposed to be the result of pneumonia in the fœtus, or of some arrest of development. At length the experiment was tried by MM. Bailly and Legendre,* and though, as in the old tale of Columbus and the egg, the thing seems so obvious that there is some risk of our underrating the merit of those who were the first to do it, it must not be forgotten that, by that simple means, they have thrown more light on the affections of the lungs in infancy and childhood, than all the writers of the previous ten years taken together.

MM. Bailly and Legendre state as the result of their observations that the appearances to which the name of lobular pneumonia has commonly been given are in reality produced by an occlusion of the pulmonary vesicles. This occlusion may be the result either of their closure by the contractility of the lung, or of their parietes being compressed by an unusually congested state of the capillaries of the lung, or of the two causes combined. In either case they assure us that the inflation of the lung will remove the solidity of the lobules, and restore them almost, or quite, to a normal state; and a frequent repetition of the experiment enables me to confirm, if it were necessary, their assertion.

It may, however, be objected that this condition of the lung is not in reality a morbid appearance, but that it is only the effect of a somewhat greater degree than usual of that collapse of the lung which takes place when the breath leaves the body. It may be suggested that nothing more is needed to produce the complete emptying of some portions of the lung, and their consequent

* *Nouvelles Recherches sur quelques maladies du pouton*; in the *Arch. Gen. de Méd.*, Janv. Févr. Mars. 1844.

solidification, than that resiliency which they retain after death, coupled with the pressure of the parietes of the thorax upon them. The possibility of this condition supervening after death cannot be denied, but still it may safely be affirmed that it is not usually, nor, indeed, frequently a post-mortem occurrence. The frequency with which isolated lobules are found dark, un-aerated, and solid, while all the surrounding tissue is perfectly healthy, can hardly be accounted for on the supposition that the state comes on after death. But conclusive evidence is afforded by the physical signs of solidification of the lung being observed in many cases in which this condition is found after death, and by the frequency with which sudden and fatal dyspnoea comes on in the course of various affections in early infancy, and leaves no trace of its cause other than a collapsed state of a considerable portion of the lungs.

A little girl was attacked, when a month old, by very severe diarrhoea which lasted for three weeks, and then left her greatly exhausted and much emaciated. No return of the purging occurred, and the child lived, though in a state of great weakness, till she was five months old. For the last five weeks of her life she was under my care, and sometimes she seemed, for a day or two, as if she were gaining strength and might recover, but these signs of improvement were never of long duration. Three days before she died, her breath suddenly grew hurried; the dyspnoea was not attended with any cough, but, from the time of its coming on, the child's exhaustion increased, and her respiration grew more and more rapid until her death.

No organ showed any sign of disease, but all presented a most remarkable degree of anæmia. Two-thirds of the upper, and almost the whole of the lower lobe, of the right lung were dark, solid, and non-crepitant, and a few lobules of the left lung presented the same appearance. Inflation restored them to exactly the same state as the rest of the lung. The bronchi were preternaturally pale, and contained no secretions. It is not possible to say why the child's inspiratory power grew too feeble to fill the lungs at one moment rather than at another, but few will doubt that it had become so just at the time when the dyspnoea occurred. A portion of the lung having become collapsed, the elastic ribs tended to render abortive any faint effort to draw in more air, and thus the vital flame went out for want of air to feed it.

Sometimes the occurrence of this condition is long preceded by indications of the imperfect performance of the respiratory functions, but yet they go on sufficiently to keep the machinery of life in motion, till some trivial, perhaps some inappreciable

cause,—a draught of cold air, a little over-exertion, the horizontal posture too long continued, the customary food delayed an hour beyond the usual time, sinks then so low that they soon cease for ever.

Some time ago I saw a little girl ten months old, who had lost her mother soon after her birth, and had been indebted to a stranger for what should have been a mother's cares. She never thrived, her chest presented that peculiar malformation commonly called pigeon breast, and the diaphragm drew her yielding ribs inwards, and thus produced a circular constriction around the base of the thorax.* But though she was a backward child, and though her respiration was always almost as abdominal as that of a new-born infant, there was no definite evidence of disease until she was nine months old. She then lost flesh rapidly, and began to cough without having had any previous catarrh. Her case seemed to be one of bronchial phthisis.

Four days before she died her breath suddenly became much oppressed, and her cough far more severe than it had been before. The dyspnoea rapidly increased, but her cough soon became less frequent. A few hours before her death her lips were quite livid, she was breathing from 80 to 86 times in the minute, the abdominal muscles acting most violently, but the chest being scarcely at all expanded. Auscultation detected nothing more than some rather large mucous râle in the lungs.

After death no tubercle was found in any organ, but large portions of both lungs presented the undilated condition, which disappeared entirely on inflation. The bronchi were pale, and contained very little mucus, but the right side of the heart was greatly distended with coagulated blood, which its thin, pale, and flaccid substance had evidently been unequal to propel with the requisite vigour.

The imperfect respiration had here for some time manifested itself; the vital powers had long been feeble; nutrition had been ill performed, and the heart itself had shared in the general feebleness, till at length air ceased to permeate a large extent of the pulmonary substance, and the child died for want of air to produce the requisite changes in the blood.

In both of these cases the lung collapsed because the inspiratory powers were too feeble to fill the minuter vesicles with air. The result is the same if the obstacle be increased as if the power be diminished, and hence the supervention of this state of lung becomes one of the most perilous, while it is

* A very interesting explanation of the mechanism by which this deformity of the chest is produced, is given by MM. Rilliet et Barthez. *Op. cit.* vol. iii. p. 649.

one of the most frequent, complications of infantile bronchitis. A little girl, previously quite healthy, was seized when ten months old with symptoms of acute bronchitis, a suffocative cough returning in paroxysms, and sometimes followed by the rejection of a muco-prurulent fluid. The symptoms throughout did not seem to allow of depletion, but ammonia, with decoction of senega and tincture of squills, and other expectorants of a stimulating kind, were given with temporary amendment. The child did not, however, appear to have undergone any marked change, either for better or worse, except that she had certainly lost both flesh and strength, when coldness, faintness, and exceedingly laboured respiration, suddenly came on, under which symptoms she died in the course of twenty-four hours.

A few recent adhesions were found on each side of the chest, between the costal and pulmonary pleura. The trachea contained a large quantity of muco-purulent matter, and the same secretion abounded in the bronchial tubes, many of which were filled by it, while nowhere did air-bubbles appear intermixed with it. There was some congestion of both lungs, especially posteriorly; the upper and posterior part of the upper lobe of the right lung, the whole of the middle lobe, and the posterior part and lower edge of the lower lobe, were dark, solid, non-crepitant, and depressed below the adjacent tissue. The same state existed in the whole inferior third of the upper lobe, and the lower edge of the lower lobe of the left lung. On inflating the lung, most of these parts were restored to a perfectly natural condition, but some patches still remained less dilated than the others, and some of the darker, almost violet-coloured, portions of the lower lobes appeared but little affected by it.

In the course of his investigations on the structure of the lung, Sir E. Home* ascertained that during the momentary distension of the air-cells in respiration, an interruption is produced between the arterial and venous circulation in the lungs; the blood being carried no further than the small arterial branches surrounding the air-cells. Now, MM. Bailly and Legendre conceive that, on the other hand, a distended or congested state of the pulmonary capillaries may compress the air-cells, and reduce them to the same collapsed condition as sometimes takes place from a mere want of inspiratory power. This theory, too, I believe to have in it a large measure of correctness, and it is probable that the occurrence of this condition is due to a congested state of the vessels in many cases in which the accumulation of

secretion in the air-tubes is not so considerable as to render them impervious to air, and in which long-continued illness has not exhausted the strength and thus impaired the inspiratory power. It is thus that in some cases of whooping-cough, where yet perhaps the quantity of fluid in the bronchi is not very considerable, we find after death a generally congested state of the lungs, and in the midst of the congested tissue, patches, more or less extensive, of a dark colour and solid texture, impermeable to air, but still admitting it, though perhaps not freely, on forcible inflation of the bronchi.

But you may naturally inquire whether any occurrence of a similar kind is ever met with in the adult, since there is certainly no such peculiarity in the structure of the lung in childhood as should render it then exclusively liable to a morbid process from which at all other ages it is exempt. My own experience would not enable me to answer this inquiry; but my friend Dr. Baly has communicated to me the particulars of three cases in which he found large portions of the lung in the adult presenting the characters that we have been studying in the child, and like it resuming a natural appearance on the insufflation of air into the bronchi. The patients in all of these cases died of fever, attended with dysenteric symptoms, and for some days before their death were in a state of great exhaustion, such as appeared to indicate the free employment of stimulants. In two of the cases extreme dyspnoea occurred some days previous to death, but though the chest lost its resonance in the situation of the affected parts of the lung, and the breathing there was deficient, yet the minute crepitation of pneumonia was not detected in either case, but merely some large mucous r le. In addition to extensive disease which in each instance existed in the intestines, this collapsed condition of portions of the lung was found; unconnected with any disease of those organs in one of the cases, combined with the effusion of tenacious mucus in the bronchi leading towards the collapsed portion in a second, and associated with true pneumonia and a state of red or yellow hepatization of other parts in a third. In short, the three cases afford examples of the three distinct conditions under which we have noticed this occurrence in the child: the first being an example of collapse of the lung, the result of simple debility; the second illustrating its occurrence in connection with obstruction to the free admission of air into the lung; and the third showing it in combination with a congested state of the organ.*

* The minute accuracy of Dr. Baly's description induces me to subjoin the following particulars of one of the examinations, as he allows me to extract it from his case-book:—"No

* Phil. Trans. 1827, p. 58 and p. 301.

But these are by no means isolated cases ; for it would seem as if in some diseases which are attended with much depression of the vital powers, this collapse of the lungs were by no means unusual. To adduce but one illustration of this, it may be mentioned that M. Louis* found in nineteen out of forty-six post-mortem examinations of patients who had died of typhoid fever, a condition of the lungs which he calls "carnification," and which it is evident (although he did not try the effect of inflation) was identical with the state so frequent in the child. He describes the parts thus affected as of a deep purple red, having lost the natural suppleness of the lung, being solid and sinking in water : they were, moreover, tougher than healthy lung ; if divided, the section became covered with a reddish fluid, perfectly destitute of air, while the tissue neither resembled that of healthy lung, nor presented the peculiar granular appearance characteristic of lung in the second stage of pneumonia. It can scarcely be necessary to follow M. Louis through his minute description of the differences between this condition and true pneumonia, for you must have already recognized the characteristics of collapsed lung.

It is true, however, that in these cases the condition of the lungs was merely super-added to other lesions, in themselves adequate to occasion the patient's death ; and hence, though interesting to the mere pathologist, it yet loses much of its value in the eyes of the practical physician. But it will not seem to you that too much stress has been laid on this state if it should appear that whenever the power of the inspiratory muscles is much diminished there is a tendency to its supervention, so that it alone may be the cause of death ; and this which I have put hypothetically really does occur in old age.

The term second childhood is not a mere figure of speech, expressive solely of the decay of the mental powers, by which the

effusion, lungs healthy, except in lower and posterior fourth of right inferior lobe, which is of a dark purple colour, is depressed somewhat below the level of other parts, does not crepitate, feels solid, but flexible and tough, almost leathery, and sinks quickly in water : the part having these characters is distinctly defined by boundaries of lobules. The whole lung being inflated, the part just described receives air with greater difficulty than the other parts, but at length becomes distended, lobule by lobule, and assumes the same pale red colour as the rest of the lungs. The change takes place, as has been stated, lobule by lobule, separate lobules appearing suddenly of the paler colour, not merely at the margins of the dark mass, but also in its centre. On cutting through the lungs and tracking the bronchi, it is found that the ramifications of those tubes which go to the dark, contracted, and condensed parts are filled up with tough mucus, from which those going to other parts are free.

* *Recherches sur la Gastro-enterite*. Svo. Paris, 1829 ; tome i, p. 361-364.

evening of life is obacured and made like the twilight of the mind in early infancy, but it is in many points the expression of a physical truth. Thus, as old age creeps on, and the nutrition is no longer adequate to supply the waste, the respiration loses the character which it presented in the adult, and the extremes of life in this respect present resemblance to each other. The muscles of the chest are no longer strong enough to dilate it fully, the diaphragm becomes, as it was in early infancy, the principal inspiratory muscle, and the vertical diameter of the thorax is that in which its chief enlargement takes place. The ear applied to the chest no longer detects the puerile breathing of youth, nor the clear vesicular murmur of manhood, but the respiration is coarser, sometimes almost bronchial. There is not, as in infancy, occasion for more rapid breathing to maintain the high activity of the vital processes, but the worn-out machinery needs to be put in motion more frequently than in the adult, in order to obtain oxygen enough to support existence ; and accordingly MM. Hourman and Dechambre* found the average frequency of the respiration in 255 old women at the Salpêtrière to be 21·79 in the minute, while in some whose frame seemed most decayed, it was far more rapid. Just as in infancy, too, so in old age, these respiratory movements are most irregular. Sometimes the parietes of the thorax continue for a long time motionless, and then there succeeds a series of rapid movements, while at other times the intervals between the inspirations are irregular, but the inspiratory movements are of the same intensity and duration. Here, then, without pursuing the comparison further, we have ample proof of the many points of resemblance between the physiological condition of the respiratory function in early life and in old age. The respiratory organs, too, in their pathological state, present, as might be expected, the same resemblance ; and accordingly MM. Hourman and Dechambre† notice a state in which the pulmonary parenchyma is of a very deep, sometimes almost of a blue, colour or even almost black, non-crepitant, and presenting a smooth surface on a section of it being made. The lung thus altered is often remarkably tough, almost like Indian rubber ; while under pressure, a viscous fluid, generally of a reddish colour, and containing no air-bubbles, exudes from it. The idea of inflating the lung had not occurred to these observers ; but they remark, that, if portions

* The above facts with respect to the respiration in the aged are derived from the interesting papers of MM. Hourman and Dechambre, in the *Arch. de Méd.* for 1835 and 6. See especially the number for Nov. 1835.

† *Op. cit.* Mars 1836, p. 272.

of lung presenting these characters be dried, the air cells have a tendency to reappear, without having undergone any other change than a well-marked contraction.

I have dwelt long on this pathological condition, though, I think, not longer than its importance demands, because we shall find that in some form or other it presents itself, modifying the symptoms, determining the prognosis, and influencing the treatment of almost all the affections of the lung in early infancy.

We shall pass to the study of some of these diseases at the next lecture; but, before doing so, may notice an affection about whose nature much controversy has arisen, but to which, thanks to the researches of MM. Bailly and Legendre, we may now assign a place as one of the results of the imperfect expansion of the lungs, and of the consequently incomplete performance of the respiratory functions. Though very rare in this country, *induration of the cellular tissue* is extremely common in the foundling hospitals of the Continent, where so many causes contribute to depress the new-born infant's feeble powers. The children in whom it occurs are usually weakly, not seldom premature, and its first symptoms generally appear between the first and fifth day after birth, though occasionally they do not come on till later. In many instances a livid redness of the whole surface is obvious from birth; but the appearance of a circumscribed hard spot on one or other extremity, or on some prominent part of the face, as the end of the chin, or the cheek bone, is the first sign of the commencement of this affection. Other spots of a similar kind are soon discovered on different parts of the surface and the body generally, and the hardened spots in particular are found to present a temperature much below the natural warmth of the body. It appears, indeed, from M. Roger's researches,* that a general reduction of the temperature precedes the induration, or, at least, exists in a very marked degree, while the induration is still extremely slight. The sinking of the temperature and the extension of the induration advance together, and the warmth of the surface may eventually fall from 100° to 90°, 80°, or even lower. If the induration become very extensive, it affects the integuments of the chest and abdomen, as well as the extremities, and the body feels cold and stiff, as though it were frozen.

This condition is, as might be expected, attended with great impairment of the general health. Children suffering from it are extremely weak, often too weak to suck; their pulse is very small, their respiration

abdominal, and their cry faint and whimpering, wholly unlike that of a healthy infant. In some of the worst cases, too, a bloody serum is discharged in considerable quantity from the nose and mouth. If the indurated parts be punctured, a small quantity of reddish serum escapes from them, though generally without much diminution of their previous hardness.

If the induration be at all general, death almost invariably takes place; and so great is the fatality of the affection, that, including even slight cases, five-sixths of those children who are attacked by it in the hospitals of Paris, die. In very slight cases, however, if the infant be at once placed in favourable circumstances, recovery need not be despaired of.

The hardness of the surface still persists after death, and the absence of any peculiarity in the effused serum, or of any sign of active disease, left writers generally in much perplexity as to its cause. The venous system is usually found gorged with fluid blood, and this congestion is often apparent in the cerebral vessels, as well as in those of the abdominal viscera, particularly the liver. Both the thorax and abdomen also frequently contain a quantity of serum, often tinged with blood,—effusions which are evidently of a passive nature, since they are unattended with any trace of inflammation either of the pleura or peritoneum. None of the viscera present any morbid appearances of half so much importance as those which are met with in the lungs, a very great part of which displays those changes to which your attention has already been directed as characteristic of their deficient expansion.* This condition of the lungs had been noticed and most carefully described many years ago, as one of the most striking attendants on induration of the cellular tissue. It was thought, by those who described it, to be the result

* The observations of J. A. Troccon, in his dissertation, "Sur la maladie connue sous le nom d'endurcissement du tissu cellulaire, &c. Paris, 1814," are especially remarkable, since he not only described with accuracy the physical condition of the lungs, but even tried the experiment of inflating them, in order to prove that they were not, as had been erroneously supposed, in a state of gangrene. He says—"J'ai insufflé ensuite de l'air dans les poumons par la trachée, aussitôt la couleur noire qui était à leur base s'est changée en une couleur rouge claire, laquelle s'est étendue de proche en proche à mesure que je continuais ces insufflations." After removing a ligature which he had applied around the veins, and allowing the escape of the blood with which the heart and lungs were gorged, he resumed the inflation of the lungs, and "les organes de la respiration ont été presque de suite dans un état absolument naturel, et aussi beaux que ceux que l'on voit pendus devant nos boucheries."—P. 37-8.

It seems strange that neither M. Troccon nor subsequent observers perceived the full bearing of these experiments till similar ones were instituted by MM. Bailly and Legendre.

* Op. cit. p. 124-151.

of pneumonia; while other observers, justly insisting on the absence of any of the other effects of inflammation of the pulmonary tissue, yet drew the attention of pathologists too much away from the chest, where the clue to the solution of the question as to the cause of the affection was to be found, had they but known how to use it. We, however, are aware that those appearances, once thought to be the result of pneumonia, are in reality due to the unexpanded condition of the lung; and we can understand how it may happen, if children be exposed to cold almost immediately after birth, and then transferred to the ill-ventilated wards of a foundling hospital, and there fed with food far other than that which nature destined for them,—that respiration may be but very imperfectly established; that their temperature may consequently fall, and the blood flowing in part through the unclosed foetal passages may stagnate in its course, may give rise to passive effusions into the great cavities of the body, and to an anasarca swelling of the surface. There are, it is true, some peculiarities in this form of oedema, but not such as to invalidate the above explanation of the cause to which it is due.

The treatment of this affection implies the removal of every cause likely to induce it. Hence warmth stands foremost as a curative as well as a preventive measure. The warm bath may be resorted to as a means of raising the child's surface to a proper temperature, provided its extreme weakness do not contra-indicate that measure. Gentle friction with warm oil is a means which has been tried for this purpose with advantage. The child should be nourished with breast-milk, even if it be too feeble to suck, and stimulants, of which white-wine whey is a very good one, will in many instances be needed. Defective respiration being the ultimate source of all the symptoms, the main principles of all your treatment must be the same as have already been laid down for your guidance in cases of atelectasis of the lung; and these it can hardly be necessary to recapitulate.

I should have said more about this affection, its nature and treatment, if it were one with which you were likely to meet often; but, in consideration of its extreme rarity in this country, I may perhaps be excused for passing it over with this cursory notice.

APOTHECARIES' HALL.

Names of gentlemen who passed their examination and received certificates to practise, 28th ult.—John Beach, Bradford, Yorkshire—Charles Wise Hollis, Yarmouth, Isle of Wight—Mallalieu Taylor, Ashton-under-Lyne.

A CLINICAL LECTURE ON CERTAIN COMPLICATIONS OF FEVER,

Delivered at the York Medical School,

By THOMAS LAYCOCK, M.D.

Physician to the York Dispensary, and Lecturer on the Theory and Practice of Medicine at the York School of Medicine.

Unusual prevalence of fever—Cases with and without eruption—Delirium as a complication—Its origin in inflammatory congestion or sub-acute arachnitis—Inflammatory action first in the hemispheres—An illustration of cerebral reflex action—Results of arachnitis—Varieties of delirium explained—Arachnitis of the base of the brain, and its symptoms—Different value of delirium mite and delirium ferox in prognosis—Treatment—The wet sheet—Cold douche—Inflammation of the cervical glands as a complication—The flea-bite eruption—noticed by Cardano, Fracastoro, Mead, Rasori—accompanied the mediæval epidemics—These identical with the prevalent disease, and dependent on the same causes—Probable future complication with bronchitis—Danger to the practitioner, and discreditable treatment of the profession in Ireland by the Government.

GENTLEMEN,—Yesterday we visited some patients of the Dispensary sick with the fever now epidemic throughout the United Kingdom. There has never been so much fever in York. For the first time in the history of the city, a fever hospital has been established. The superintendent of that hospital died from an attack. We visited his widow yesterday, who was convalescent from fever, but deplorably weak. By her side, in the same bed, was her son, a youth of seventeen. His head was bound round with a handkerchief, in the vain hope of alleviating the severe frontal headache he was suffering from. His eye was turgid and reddish; his skin covered with stigmata, or small red spots, resembling flea-bites; his tongue was coated with a ragged whitish-brown fur, and his teeth with sordes; and, on examining his throat, (of which he complained as being sore), we found the pharynx and fauces red, and the tonsils slightly enlarged; his pulse was 115 to 120.

Our attention was directed to his sister, aged twelve years. Her head was drooping; her cheeks flushed; her tongue covered with a white creamy fur, through which red points were protruding here and there. She began with shivering two days before, (that is to say, on Monday), and with

violent frontal headache. She has thirst, sleeps little, and eats less. She is in the first stage of the fever; her brother is in the second. On this day week the lad had the same symptoms—the heavy frontal headache and a feeling of illness. Yesterday, on the seventh day from the attack, the eruption appeared. As his sister has the same fever, we may reasonably expect it will have the same periods, and that she will have an eruption to appear on Sunday next.*

We went from this family to another. A glass-blower, aged about forty, was taken ill with headache and slight rigors on Sunday week. I saw him the next day, and detected the premonitory symptoms of fever. There was the peculiar expression of countenance, the dull languid eye, sense of feebleness and oppression at the præcordia, nausea, and headache. I prescribed an emetic and a gentle aperient, and for a day or two he was much relieved—he thought himself almost well. After the fourth day he relapsed. On the seventh (last Saturday) the eruption appeared, and yesterday (Tuesday) he was delirious during the day. He spoke despondingly of himself and his affairs,—of the state of the country; deliriously blamed his folly in keeping a pig in his yard, and refused to lie down or to take drink. I presented the cup to him myself, and at my solicitation he attempted to swallow, but every time the edge of the cup touched his lips, he blew into it, and apparently involuntarily, and in spite of his efforts to the contrary. I directed the cold douche to be applied to his head, and that, so soon as applied, his food, drink, and medicine should be given to him, not doubting but that the douche would, temporarily at least, have a beneficial effect on the sensorium. He had also a blister behind each ear. Bleeding was utterly inadmissible, as it is in all the cases of fever we have. This man is in the third stage of the fever.

When we visited him to-day (the eleventh) we found him free from delirium: after the douche last evening he swallowed freely, ceased to wander mentally, and at last slept. His wife observed that he fell off to be worse at four or five o'clock in the morning, and began to amend at the same hour in the evening; and to-day we find him decidedly better, but he will relapse again until the fourteenth day. You will observe that neither of the other patients had as yet had delirium, but then neither was in the same stage of disease.

I wish to direct your attention more especially to this symptom, because it is one of the most frequent, and frequently indi-

cates a fatal termination, or the reverse, just according to the character of the delirium. It is so usual a symptom in some febrile epidemics, that they have derived from it the designation of "brain fever," or "cerebral fever;" and pathologists have even considered fever to consist essentially in inflammation or congestion of the brain. Indeed, pathological anatomy affords some grounds for this theory; for in all cases of fever ending in coma, congestion and effusion within the cranium may be found. But patients may have fever without any symptom of cerebral disorder, and they may die of it with no other symptom than such as would result from other affections ending fatally; as bronchitis, or pneumonia, for example. This morbid condition of the brain is not, then, necessarily an accompaniment of fever; usually it co-exists, but not always. You will ask, what is it, then? I answer, it may be congestion; it is more probably sub-acute arachnitis. My reasons for this opinion, are—firstly, that you have the pathological anatomy of arachnitis in those who have died of the fever when complicated with cerebral phenomena; and secondly, that, if you separate the cerebral disorder in idea from the other symptoms,—if you isolate it, and trace its progress from the first dawn of morbid sensorial phenomena to the death of the patient,—you will find its course is exactly similar to that series of symptoms known to nosologists as indicating sub-acute arachnitis. At the first onset, you have severe headache, great mental irritability; conversation cannot be endured; the slightest sounds annoy; the nights are spent in watching. All this before delirium occurs, but forewarning it, and ushering it in. The inflammatory congestion develops its results first in those parts of the brain which minister to the intellect, or to the ordinary pursuits of the individual, so that he busies himself in his delirium with his affairs; he orders, arranges, schemes. Sometimes he speaks pretty distinctly, sometimes you hear only a few words. This state is called muttering delirium, or typhomania; and the delirious condition generally is termed delirium mite—mild delirium. But the cerebral congestion and effusion may be so great in the portion of the brain thus affected that its function is interrupted, or much impaired: you have then *stuper*, from which the patient may be more or less readily roused according to the energy of the stimulus applied to his senses, or according to the degree of morbid condition of the cerebrum.

Our patient, the glass-blower, had simply delirium mite: he talked of his affairs, and although somewhat mutteringly, yet pretty distinctly. It was a bad sign that he was so delirious during the day. The circum-

* The eruption did appear on Sunday as anticipated.

stance of his blowing at the water was a curious illustration of cerebral reflex action. His daily labour had established a direct connection between the surfaces of the lips and the mechanism of respiration, so arranged as to perform the act of blowing. On account of the cerebral disturbance, the moment his lip touched the cup the reflex act of blowing followed: he willed to drink, that is, to inspire, but his will was helpless against the incident excitator stimulations, which had been habitually applied in the exercise of his occupation as a glass-blower. And it was of importance that this morbid action should be remedied, because the supply of food and medicine, and especially of diluents, so necessary in fever, was prevented. It was important to remember, too, that the douche might procure only a temporary suspension of it, and that therefore the opportunity should be seized of getting the necessary supplies into the stomach, lest it might not again occur for several hours.

If the cerebral disease extends no further than the hemisphere, and the effusion upon them and within the ventricles is slight, the fluid is re-absorbed, the congested vessels are emptied, and the inflammation terminates by resolution, as the fever abates. This is the *ordinary* termination: it ends occasionally, however, in idiotical weakness, or in mania, more or less permanent; and sometimes confirmed insanity, or idiocy, is the melancholy result. But should the inflammation extend to the base of the brain, you have a very different set of symptoms developed, as it creeps downward. The eye begins to glare, the patient is surly, and at least threatens violence. This is delirium ferox—ferce delirium: I am inclined to think the observations of phrenology will explain this change in the character of the delirium; you know that combativeness and destructiveness lie towards the base of the brain, and probably it is excitement of these organs which develops *delirium ferox*. Be this as it may, delirium ferox is a *signum malum*: delirium mite means little; this delirium is often the forerunner of incessant restlessness; increased frequency of respiration; very rapid pulse, amounting to 140 to 160 per minute; loss of power to swallow; jactitation; picking of the bed-clothes; convulsions; paralysis of the sphincters, and consequent involuntary excretion of urine and feces; and finally, death. With this combination of symptoms, death is almost inevitable: with the accession of delirium ferox and a pulse at 140, hope departs; your skill will avail little; effusion is taking place at the base of the brain and into the spinal cavity; and the motive powers of life and of its principal machinery—the heart and

lungs—are being overwhelmed at their origin.

Arachnitis is usually the cause of death in the current epidemic; if it were not for this, much fewer persons would die of it.

It is of great importance, then, in the treatment of fever, that you prevent or cure this complication of the fever; you may prevent by all the means which diminish the febrile action, for you thereby diminish the cerebral congestion and inflammatory action. I have, from time to time, relieved the severe frontal headache, the sleeplessness, and the irritability (always exacerbated at night) by wrapping the patient in a cold wet sheet at bed-time, *provided the skin is hot*. If the skin be hot, reaction on the surface takes place in a few minutes, (for at first the skin is chilled) and then in a while a copious perspiration ensues. In an hour or two the sheet is removed, and the patient turns over to sleep; his headache relieved, his restlessness abated, his skin moistened. The plan I recommend is, that the patient be stripped, the sheet wrapped round and round him, then a blanket upon that, and lastly, his ordinary bed-clothes, beneath which he lays like a mummy. In addition to this the cold douche to the head may be used, but very gently at first—only for a minute or so; and when the delirium is advancing, blisters to the nucha and behind the ears, and bladders of cold water or of ice to the head. You cannot bleed, and even leeches with many patients are inadmissible. Do not, however, be tempted by the apparent depression to give wine; reserve that for those cases of malignant typhus in which the powers of the system are truly prostrated. The fever is certainly in some degree adynamic, but in ordinary cases wine is not needed, and will increase the cerebral disorder.

The affection of the brain which complicates fever leads to the production of secondary phenomena: sometimes it is so local that you have excessive sighing and depression only; sometimes a sort of monomania is developed. Again, great dulness of perception may result, and your patient is deaf or dull of hearing; feels no thirst, no hunger; answers your questions, but really perceives or remembers nothing. This loss of sensational power is often an index to the gravity of the attack; in proportion as it is great the fever is dangerous; in proportion as sensibility returns is the greater the hope of recovery.

We noticed that one of our patients complained of sore throat: *enlargement of the tonsils and external cervical and maxillary glands* is a frequent complication of the epidemic. Scarlatina is very prevalent just now, and hence, cases with this complication of glandular inflammation are referred to

scarlatina. I think, however, that this form does not belong to the scarlet rash group—it is a fever *enī generis*, and one of which you will find frequent mention in the older writers, under the name "*angina*;" it used to prevail formerly in York. Sydenham mentions this swelling of the throat-glands as being symptomatic only in cases of fever, and as being then quite distinct from another form which he describes.

The *flea-bite-like eruption* is evidently no new appearance, and like the glandular inflammation has accompanied epidemical fevers in times past. Wintringham, describing a "putrid fever" which was epidemic in York in 1728, mentions the appearance in some cases of "red spots, not unlike flea-bites, on the breast, sometimes interspersed so that the skin had a marbled appearance." Hecker describes an epidemic which broke out in Granada after scurvy had been extensively epidemic throughout Europe, and which, extending to Italy, was described by Fracastoro. He terms it a "petechial fever," but it was also termed the Lenticula, Puncticula or Peticula, Febris stigmatica, and Pestis petechiosa, on account of the appearance, "on either the fourth or seventh day, of red spots like flea-bites or larger, resembling lentils, upon the arms, back, and breast;" just such spots as may be seen on the lad Empson, and the glass-blower, and the general symptoms were the same, only the disease was more severe. The patients are described as "lying upon their backs with an oppressed brain, their senses blunted, and, in most cases, delirious and gloomy: muttering, with bloodshot eyes, commenced on the fourth or seventh day;" that is to say, symptoms of arachnitis. Some were lethargic, others suffered from sleeplessness. You will observe that the periods of disease described by Fracastoro are the same as those we have noted in the two patients with the eruption; these being just the same, in fact, as the periods of variola.

Cardano (writing before Fracastoro) described a similar fever, prevalent as a plague in Milan, under the name of the pulicaris disease ("*pulicaris morbus*"), from the resemblance of the eruptive spots to a flea-bite. Rasori, to whom I am indebted for these details, has described a similar epidemic in his "*Storia della Febre Petecchiale di Genova*," an exanthematous fever which devastated that city during the years 1799, 1800, when besieged by the French, and when the inhabitants were famished. Seeing that this eruption has followed upon the loss of the potato crop and a great deficiency of food, if not an actual famine, we must, I think, attribute its appearance to an altered condition of the fluids consequent on the altered or defective diet of the

people, and not look upon it as a specific exanthem. There are those who think a second attack does not occur, but I have heard of several relapses. Observations are wanting, and I would not like to speak positively on this point. You will remember that I stated the great probability of our summer fevers being like to those which prevailed in the middle ages, and accompanied with petechial eruptions, in consequence of the want of fresh vegetable food, and the prevalence of scurvy. It does not appear that the deaths from that disease are fewer, although fresh vegetables have been very abundant during the summer, as four persons died of it in the metropolis during the last fortnight, or five times the ordinary proportion,—a fact which must convince us *that epidemical diseases may continue after their causes have been removed.*

There is one other complication which I will mention to you as *likely* to occur, and that is pulmonary inflammation, and especially bronchitis. This is a dangerous complication, but it will not perhaps be common until the cold weather sets in; you may then expect it.

The epidemics now prevalent afford you a favourable opportunity of studying their nature and differences; I hope you will not neglect it, but sedulously observe, read, and think for yourselves. It is probable that the typhus will decline somewhat during the winter; at all events the medical profession have the strongest reasons for hoping so, seeing that their duty towards the sick exposes them to no ordinary danger, and for which the reward, when a reward is given, is so paltry as to be no equivalent to the risk. How any *gentleman*, much less a statesman, could sanction the offer, in Ireland, of *FIVE SHILLINGS per diem* for such services, I cannot conceive. This is certain, that the danger to health and life is as great to those who undertake those services, as if they were engaged in a destructive battle; and probably no reward, however great, would induce those who sanctioned the paltry payment to follow the footsteps of the fever-physician in his daily fight against the enemy. If, in a sanitary bill, the public services of the practitioner be thus niggardly estimated, the profession cannot be expected to support it.

MEDICAL APPOINTMENT.

MR. J. F. FRANCE has been appointed to the office of Surgeon to the Eye Infirmary of Guy's Hospital, rendered vacant by the decease of Mr. Morgan.

Original Communications.

ON
MORBID SYMPATHIES;
OR THOSE ASSOCIATED STATES OF DIS-
ORDER WHICH MOST FREQUENTLY
PRESENT THEMSELVES TO
THE PHYSICIAN.

*Being the Croonian Lectures delivered at
the Royal College of Physicians in
March and April, 1846.*

BY JAMES COPLAND, M.D. F.R.S. &c.

[Continued from p. 760.]

I NEED not pursue this subject further, seeing that I have fully discussed it in several parts of my work on Practical Medicine; but I wish to direct your attention to one topic more particularly connected with it, and which, in its relations to various maladies, has been most unaccountably overlooked—namely, to the probable want of correspondence, on some occasions, between the capacity of the vascular system and the amount of its contents—between the area of the containing vessels and the amount of fluids contained. This presumed want of adaptation, or of accordance, may be great, quite irrespective of the quality or condition of the circulating fluids; the tone of the containing vessels being so remarkably deficient, owing to depression of the organic nervous power, as not to occasion the due accommodation between the vessels and the blood circulating in them—as not to admit of that amount of vital contraction and adaptation of the vessels necessary to the due performance of the circulation, and to the retention in them of the more fluid parts of the blood, which either alone, or with more or less of the hæmato-globulin, readily escape from the relaxed capillaries in the more yielding surfaces and erectile tissues. Now, a due correspondence between the containing vessels and the contained fluids, and the mutual influences both vital and mechanical resulting from this correspondence, and from the healthy conditions of both the vessels and the fluids, are obviously wanting in a more or less remarkable manner, in many maladies, especially in several malignant and pestilential fevers, more

especially where the vital powers are remarkably depressed; and it is chiefly owing to this depression that the vascular system is incapable of accommodating itself to the amount of its contents. In these circumstances the pulse is at first broad, open, soft and compressible, although it is subsequently small, feeble, creeping, or undulating; and the abstraction of even a small quantity of blood, or the loss of it by the passive hæmorrhages or exudations, which often occur very rapidly, sink the patient, by increasing the want of correspondence, now pointed out, between the vessels and the blood,

This want of correspondence, or of vital accordance between the blood-vessels and their contents, may arise also from a different pathological condition, namely, from the blood being so deficient in quantity as not to impart the requisite state of *tension* to the coats of the vessels; and hence, when the vital tone of the vessels is impaired at the same time that the blood is deficient in quantity, the current of the circulation is irregular and languid: and vascular action, which was already asthenic when the vital tone of the vessels was impaired, becomes much more asthenic when the blood is also deficient in quantity,—fatal congestion and sinking of the vital powers ultimately supervening.

In pestilential maladies, and even in other malignant diseases, the tendency to death is to be imputed as much to the increasing want of accordance—to the progressive defect of adaptation—between the vessels and the blood, as to the changes which have actually taken place in the constitution of the blood; and several of the associated phenomena, characterizing the advanced and last stages of these maladies, are to be ascribed to this circumstance—to this pathological condition existing so generally throughout the vascular system. Thus, in the hæmogastric pestilence, or true yellow fever, the phenomena observed in its progress, and the acceleration of death by passive hæmorrhages, or the black vomit, in its last stage, are readily explained according to this view; whilst the most successful mode of treatment for this malady is that which is directed to these changes in the vascular system, and to the state of

organic nervous influence upon which these changes originally depend.

That this want of accordance between the amount of blood in the vessels and the capacity of the blood-vessels—this deficient vital adaptation of the vessels to the amount of their contents—is a most important pathological condition existing in the progress of several malignant diseases, and associating the affections of distant organs; and, moreover, that death in these diseases is to be imputed rather to this circumstance—to this condition—than to the poisoned or altered constitution of the blood, heightened as it often is at an advanced stage by passive hæmorrhages, are facts, illustrated by the course of several maladies, and demonstrated by what is observed after death from hæmagastic pestilence. In the last stage of this malady, and as the altered blood—altered as regards its vital condition, physical appearances, chemical condition, and in the loss of the greater part of its fibrin—exudes from the mucous surfaces and outlets, the circulation becomes remarkably slow, the vessels appear and feel soft, relaxed, flaccid, and imperfectly filled; the blood returns to the right side of the heart in deficient quantity and celerity; absorption of fluid from the digestive organs is arrested; and ultimately the heart's action ceases, from an insufficient return or supply of blood to the right auricle. Upon examination after death, the digestive canal contains much black grumous matter, consisting chiefly of altered blood, or of matters similar to those thrown off from the stomach and bowels for some time before death; the abdominal vessels, and especially those contributing to the portal system, the ramifications of the vena porta, and the hepatic veins, are empty, and the liver is remarkably pale. The whole vascular system is deficient of blood. Analogous changes characterise the last stage of other maladies, as pestilential cholera, plague, &c. the chief difference being that, in the former especially, the watery parts of the blood are those principally lost, the parts which are left being not only insufficient for the maintenance of a due correspondence between it and the vessels, but also unsuited to capillary circulation, and to the sustentation of the vital functions; the soft solids being also more or less

deficient in vital cohesion, and rapidly passing into dissolution, as I have shown on several occasions.

It being admitted—and the fact cannot be disputed—that changes in the quantity and quality, or state of the blood, and still more remarkably changes in both quantity and quality, associate disease of several organs, both those intimately connected anatomically, and those more distantly related physiologically, it must necessarily follow that not merely functional disturbance of these several remote as well as proximate organs is thereby produced and associated, but also those structural changes, and the most extensive disorganizations of these organs often result. But it is not sufficient for us to take for granted these changes in the blood and vascular system, in thus complicating or associating disorders and distempers, and in developing various sympathetic ailments; it is of importance to us to trace these changes to their sources, and to view their relations, in order that we may the more fully comprehend their extent, and hence be enabled the more satisfactorily to prevent their accession, to arrest their progress, or to counteract their effects. I have already pointed out, briefly and inadequately, several of these sources and their pathological relations, and referred you to places where these topics are more fully discussed, and therefore I shall merely enumerate the several conditions to which your attention should be directed in your investigations of the sympathies or the morbid associations and complications resulting from alterations of the blood and vascular system.

Firstly, The state of organic nervous influence in relation to the agents affecting it, and to the resulting influences and changes upon the vascular system and blood.

Secondly, Imperfect chymification and chylicfaction, owing to the unwholesome nature of the ingesta, or to impaired digestive function, or to states of the digestive mucous surface; the chyle either being imperfectly elaborated, or of so unhealthy a constitution, as to affect the glands and viscera through which it circulates whilst passing onwards to the blood, and after it has mixed with this fluid.

Thirdly, The absorption of morbid secretions, excretions, or other matters,

either from the digestive canal and mucous surface, or from cellular parts, or parenchymatous organs or other structures, these matters often inflaming the blood-vessels or the absorbents and glands, contaminating the blood, producing chronic or hectic fever, irritating or inflaming remote organs, or giving rise to abscesses or purulent deposits, diffused or encysted, primary or secondary, in distant parts, as more fully shown in the articles "Abscess," "Absorption," "Blood," and "Disease," in my work on *Practical Medicine*, and in my paper on the "Pathology of the Veins," in the *MEDICAL GAZETTE*.

Fourthly, Suppression, interruption, or diminution of any of the eliminating or depurating functions—of either of the excretory actions, by which effete materials are removed from the blood, and this fluid is preserved in a healthy condition; interruption of one or more of these functions, altering the state of the blood, changing the healthy relations subsisting between it and the heart and vascular system generally, disordering the other excreting organs, exciting general vascular disturbance, and superinducing various changes, contaminations, effusions, and even disorganizations in several organs or parts, or generally throughout the frame.

Fifthly, The exciting or depressing emotions of mind,—all influences, excitants, or agents, affecting either the cerebral, or spinal, or the ganglionic sensibility,—all inordinate excitations of the mind, passions, or sentiments; or of the senses and muscular movements; or of any of the organs requisite to the continuance of the life of the individual, or the perpetuation of the species,—are liable to be followed by sympathetic disorder of distant but related parts, owing to the organic nervous connections already pointed out, to the changes frequently produced in the fluids—the chylous, lymphatic, and sanguineous—to the consecutive changes of nervous power, and electromotive conditions of the general systems of the body, and to the *unity*, as well as to the special systems and conditions, of the frame.

From one or other, or from two or more, of these, numerous associated morbid conditions *result*, some of which have been variously estimated and

classed, with the narrow but vain view of giving them the individuality and identity displayed by the genera and species of the animal and vegetable kingdoms, characteristics which they are altogether incapable of evincing, owing to the diversified features, associations, and complications, resulting from these five great sources, and their innumerable states, modifications, and progressive changes. The most common, and at the same time the most uniform of the special results, proceeding from these sources—the most frequent of these sympathetic associations and morbid complications, in which changes throughout the whole frame are most remarkably produced, and most intimately dependent upon each other, through the *media* especially of the organic nervous system, and the vascular system and blood, are the following:—

1st. Sympathetic or symptomatic states of vascular excitement or action, resulting from changes in the organic or cerebro-spinal sensibility of parts; or from local injury, or from inflammation, pressure, or other local changes,—*sympathetic fevers*. The *media* of general disorder in these are, firstly, the nervous systems, and consecutively the vascular system and blood, the several concomitant and intercurrent changes varying in different cases with the nature of the causes, and the numerous circumstances connected with these causes, and the individual affected.

2nd. Chronic or hectic febrile conditions, resulting generally from a persistent source of irritation implicating primarily the organic nervous function, and consecutively changing the nutrition and secretions of the part, and ultimately altering the states of vascular action and of the blood; followed frequently by absorption of morbid or puriform or tubercular matters into the circulation, by consecutive deposits, abscesses, &c. *Hectic and chronic fevers*, consequent upon local irritations, tubercular deposits, encysted abscesses, carious bones, malignant formations, &c. are all of this description, and are ultimately accompanied by altered conditions of the blood, imperfect assimilation, anæmia, &c.

3d. Periodic fevers, or febrile and painful states of the system, arising from malaria, and varying in character with the concentration of the effluvium,

and with the proportion or amount of emanation from dead animal matter which is conjoined with it. The morbid impression in these diseases is made primarily upon the organic nervous system, the vascular system and blood being consecutively affected, and various visceral affections often ultimately resulting.

4th. Adynamic, typhoid, and putrid fevers, or those arising from the emanations proceeding from living or dead animal matter. The morbid impression is made by those emanations primarily and principally upon the organic nervous system, although the blood may also be primarily contaminated, as it obviously is consecutively, the soft solids generally becoming, through these media, ultimately more or less implicated.

5th. Exanthematous and pestilential fevers, or those fevers arising from specific morbid poisons. The morbid impression is generally made, in these distempers, in ways similar to those now stated, and the results are equally general and serious, often more rapidly fatal, particular fevers presenting peculiar characters.

In all these maladies, although the organic nervous system, in the usual mode of exposure to these exciting causes, receives the first morbid impression especially when the poison is inhaled with the air into the lungs, the blood soon becomes contaminated, owing either to the absorption of a portion of that poison, or to the influence of the primarily induced morbid condition of the organic nervous system, in impairing the several secreting and excreting functions, and in altering in this way not merely the healthy constitution of the blood, but also the vital adaptation of the vascular system generally and of the blood to each other; and, moreover, in destroying, both by the primary impression on the organic nervous system, and by the consecutive effects, the vital cohesion of the several simple tissues, structures, and compound organs.

These several classes of disease, whether viewed individually or in the aggregate, remarkably illustrate the great extent to which not merely functional disorder, but structural disease, and even more or less general disorganization, may be associated, when a poisonous influence impresses

any one portion of the congeries of ganglia and plexuses constituting the organic nervous system, or contaminates the circulating fluids; the effects being the more rapid, the more general, and the more fatal, the more concentrated or intense the poison, and the more unequivocally and immediately the primary changes are produced, both in this system and in the blood and vascular system.

[To be continued.]

CASES OF ANEURISM OF THE AORTA,

WITH REMARKS.

By CHARLES J. HARE, M.D. Cantab.

Physician to the St. Marylebone General Dispensary.

[Continued from page 798.]

CASE II.—*Esther M*—, æt 56. She was formerly a nurse, but for ten years past had earned her livelihood by cleaning out some school-rooms, for which purpose she had frequently to move heavy boxes of books: she continued at this employment until Feb. 1845, since which time she has not been able to work at all. Was a widow, but had not had any children, not having been married until 44 years of age. Her habits of life were very regular, and she had always had sufficient food and clothing. She was of moderate stature, good conformation, and rather stout.

When six years old she had small-pox very severely, from the effect of which she entirely lost the sight of her right eye, and that of the left one was much impaired: she had, however, until the past few years enjoyed good general health. She had had several severe falls, and one of them, seven or eight years ago, had caused a compound fracture of one of her arms. About six years and a half since she began to suffer from dyspnoea, which gradually became worse, and occasionally came on in severe paroxysms; for nearly the same period she had been subject to palpitations of the heart, the severity of which was also at times considerably increased: she had likewise usually a cough during the winter months, and suffered from one, worse than before, during the early part of 1844: she accordingly had recourse to medical advice, and

was relieved. A little before Christmas of the same year, she became an out-patient at Middlesex Hospital, owing to her dyspnoea, cough, palpitations of the heart, together with a peculiar sensation of tightness across the chest. She was again relieved for a while of her symptoms, but on the 3d of April, 1845, she came under my care complaining of similar ones to those just named. She had walked about half a mile to the Dispensary, and felt fatigued by the exertion. Her complexion was rather florid, but with a slight purplish tinge on the lips and cheeks: the breathing was short, and the respirations somewhat jerking, and she stated that the dyspnoea was very much increased by walking, or any other exertion; indeed, in consequence of it, she had not been able for two years previously to make up her own bed. She had no pain in any part of the chest. Her voice was natural, but interrupted occasionally by the shortness of breathing. The cough was somewhat frequent, and worse when out of doors or exerting herself; accompanied also by a moderate amount of mucous expectoration, not particularly tenacious. She described the palpitations as being very troublesome; seldom being altogether absent, but at times more violent than at others: they were frequently increased by the recumbent position. Pulse 68, regular, full, but somewhat jerking; it was equal at both wrists.

Besides these symptoms, however, there were others also referable to the chest: for some time before I saw her, though how long I could not exactly ascertain, she had been occasionally subject to paroxysms, during which her sensations were those of impending suffocation, and altogether different from those of the dyspnoea already alluded to: they came on suddenly, sometimes when she was quiet, more generally after exertion, and still oftener on awaking from sleep: they also frequently ensued after she had taken, as she often did, a large quantity of tea. They commenced with a peculiar sensation almost indescribable, but most resembling that of a ball forming under the lower end of the sternum; this seemed rapidly to expand in all directions, but especially towards the shoulders, till it filled, she said, the whole chest, when she

felt almost suffocated, and as though she could live no longer; so distressing were these paroxysms that when they came on, though free from pain, she could never avoid screaming aloud: if in bed, she immediately got out in order to obtain some ease; if in a chair, she started up and seized hold of some article of furniture, or of any one who happened to be near, until the attack was over, which was usually the case in from half a minute to a minute.

I examined her chest, both on the day when she first attended the dispensary, and several times shortly afterwards. The following were the physical signs:—the chest was well developed, but did not expand much on inspiration; the intercostal spaces were not depressed: the apex of the heart was seen to pulsate about one inch and a half below the nipple, and too much to the left side; the impulse strong. No anormal pulsation could be seen at any part of the chest, but on firmly pressing the ends of the fingers downwards between the cartilages of the second and third ribs, close to the right side of the sternum, an exceedingly slight impulse could be felt with each stroke of the heart; it was, however, barely perceptible, and required attentive examination in order to be certain of its existence. The action of the subclavian on each side was strong. Over almost the whole of the anterior part of the chest percussion was clearer than natural, and even the usual dullness in the cardiac region was less marked than is commonly the case: between the second and third rib of the right side, however, close to the sternum, and extending an inch from it, percussion was distinctly duller than it ought to have been, and duller also at the corresponding part of the left side: there was likewise dullness over the middle three-fourths of the sternum. Respiration was audible over the whole chest anteriorly, but somewhat less loud than elsewhere near the right side of the sternum at the part above alluded to: its character here did not altogether cease to be vesicular, though it was somewhat mixed with bronchial respiration. Slight sonorous rhonchi were heard in the lower part of the lungs.

At the apex of the heart the natural first sound was alone audible, but, on

approaching the base, a murmur, with the second sound, became gradually more distinct, while the first sound still continued healthy; over the aortic valves the murmur with the second sound was quite distinct, though not very loud. There was a loud double rasping sound heard on the right side, *most* distinctly and loudest about half an inch from the sternum, and over the upper border of the third rib, but yet very distinctly as high as the upper border of the second rib, and over the right half of the sternum, as low down as the bottom of the middle sternal region: on the left side of the chest the only murmur distinguishable was that already described with the second sound of the heart. Of the double rasping sound on the right side, that accompanying the systole of the heart was much the loudest, and could be heard in the cavities, but no second sound was here audible; over the right carotid a purring tremor was distinguishable. The murmurs were very superficial, and so loud as completely to obscure the natural heart sound over the whole of the right side of the chest. Posteriorly there was clearness on percussion, and natural vesicular respiration; mixed, however, in the lower parts of the lungs, with somewhat more numerous sonorous rhonchi than in the front part of the chest; and also, in the same region, with some slight mucous rhonchi. The rasping sound was barely audible in the right interscapular region.

The tongue was tolerably clean; the appetite good; not much thirst; no sickness; bowels rather costive; the urine somewhat scanty and high coloured.

She was ordered a mixture containing some ipecacuanha, squilla, and digitalis; and a blister was applied to the chest. The bowels were regulated by the compound extract of colocynth, combined with extract of hyoscyamus, and occasionally by brisker purgatives. Under this and similar treatment the bronchitis disappeared, and she felt altogether considerably better, but still continued to have palpitations of the heart, and occasional paroxysmal attacks such as have been already described. About the 8th of May she first perceived some swelling of the feet and ankles, which, when she attended at the dispensary, on the 10th,

pitted, and were somewhat painful on pressure; the swelling extended some little distance up the legs, the right one being more swollen than the left. She was ordered 2½ grains of blue pill, with one grain of powdered squilla, and half a grain of digitalis, night and morning; and a mixture, containing spirit of nitric æther, and some other diuretics, three times a day. These acted on the kidneys, and the anasarca was partially reduced, but afterwards again increased, so that from the 19th of May I attended her at home.

On the 7th of June she complained more than usual of palpitation of the heart, and of an increase of dyspnoea; she has also recently had more of the attacks of angina pectoris; her pulse was moderately full: she was bled to the amount of six ounces with relief, and the following mixture was given. —Acetate of Potash, ℥ss.; Tinct. of Digitalis, ℥iiss.; Ipecacuanha wine, ℥ss.; Camphor mixture, ℥ixss. To take two tablespoonfuls three times a day.

The anasarca, however, though slowly still gradually increased, but it was afterwards diminished by the bitartrate of potash given every morning in half-ounce doses. During this time scarcely any change had taken place in the physical signs of the chest, but on examining her carefully on the 22d of July, I found that by pressing the fingers on the second intercostal space, close to the right border of the sternum, the pulsation there could be felt somewhat more than before, though by no means very distinctly: no purring sensation was perceptible; the loud double rasping sound still continued; the pulse was 68, and not quite so full as formerly. No further alteration ensued up to the time of her death, in the physical signs referable to the heart, but the lungs became more congested, and there was an increase in the quantity of sputa, which she had at times great difficulty in expectorating: some dulness manifested itself in the lower parts of both lungs posteriorly, and the respiration, which became feebler there, was also mixed with a considerable amount of mucous rhonchus, but there was no true crepitation, nor was there at any time any hæmoptysis, nor were the sputa at all of a rusty colour. She was for some time confined almost altogether to bed,

having the body propped up both night and day in the sitting posture: at length the legs became exceedingly anasarctous as high as the groins, the abdominal parietes also pitting somewhat on pressure, but there was no ascites. The attacks of angina were at times very severe, and though she was usually unable even to move out of bed without considerable assistance, when these attacks came on she would rush out of it with surprising quickness, in order to get some ease from the distressing sensations which the attacks produced. Stimulants, such as sulphuric æther or the sesquicarbonate of ammonia, were the medicines which were the most effective in warding off the paroxysms. She never complained of pain in her chest until a few hours previous to her death, which took place on the 21st of November: for upwards of an hour before it occurred she was screaming almost incessantly, apparently owing to a sensation of impending suffocation: she then expired quite suddenly.

[To be continued.]

ON THE
ADVANCE OF THE ASIATIC
CHOLERA:

WITH SUGGESTIONS FOR ITS TREATMENT.

By CHARLES W. BELL, Esq.
Manchester.

THE near approach of cholera, together with your challenge to the profession, to determine upon the principle which is to guide the treatment of that disease, induce me to venture on expressing the views which peculiar circumstances, and much experience of its management, have led me to form; and to state the practice which, all throughout the progress of the cholera that appeared in Persia in 1842 and 3, proved successful in some thousand cases.

It is true that the type of disease in that epidemic was mild in the generality of cases, but it was the commencement of the identical cholera that is now approaching us; and, if changed now, is changed probably only in degree, not essentially in its nature; and as treated by the native practitioners was almost always fatal.

It reappeared irregularly in Persia in 1844-45, and again, with greater virulence, in 1846; while, in the present year, forsaking the Eastern provinces of that country which it had scourged, it passed on, as in 1831, to the Russian provinces of Georgia and Circassia, and into the Turkish province of Armenia.

In Southern Asia, after confining its attacks for two years to the South-eastern provinces of Arabia and Mesopotamia, it has now advanced and crossed the Red Sea into Egypt on the one hand, and on the other, overspreading Asia-Minor up to the coast of the Levant; now threatening Greece, and it is said has already appeared in Constantinople. Meanwhile, passing to the north of the Caucasian range, it has arrived at Riga, and also penetrating Circassia from Teflis, it has crossed the mountains, and arrived at Verouish, the most central town of Southern Russia.

Again passing through Turkish Armenia, it reached Trebisonde, and thence, crossing the Black Sea, arrived at Varna, the mouths of the Danube and Odessa: and already single cases are reported at Vienna.

Thus, instead of the limited course which it pursued in 1831-32, confined to Russia, Prussia, and Denmark, till it finally reached England, and only returning in 1843-44, and 45, upon Austria, Saxony, Southern Germany, France, and Italy, and attacking them in the irregular manner in which it is wont to revert to places that it had left intact in its first progress,—it is now advancing upon the whole of Europe at once by five different routes, and appeared in as many points in the extended line between Greece and Riga.

We have, therefore, reason to fear that its future progress may be marked by a virulence proportioned to its extended front and uniform progress. Under such circumstances, I hold it to be an imperative duty in any one who has had an opportunity of studying the disease, to add what he can to the imperfect knowledge that we possess on the subject; and I venture to hope that these considerations will excuse me for throwing aside much of the diffidence that I should otherwise have felt in publishing my own views and practice until they should be further confirmed.

It was my good fortune first to study the disease under my cousin, Mr. G. H. Bell, in Edinburgh,—author of what appears to me to be incomparably the best work on the subject that I have met with. I afterwards saw the disease in London, when it was the fashion to treat it on Dr. Stevens's system of endeavouring to supply the exuded serum of the blood by the administration of salt and soda. After this, all the experience I had of it was a chance case in Bombay, till 1842, when a series of epidemics of peculiar character commenced in Persia, where I was attached to the Embassy, and was in medical charge of the Persian army.

The first of these was dysentery; then a peculiar periodical disease, till then undescribed, attended with intense disturbance of the circulation and the nervous system;* which also appears to have been observed at Strasburg. Then came tropical remittent, then congestive ague;† and this finally terminated in true cholera.

To this series of diseases I am indebted for being led—as I cannot but think I have been—by a species of natural analyses, and by easy transitions, to a clearer insight into the nature of the disease; and to a practice, unbiassed by theory, and simply arising out of the process of accommodating my remedies to the changing type of disease: which then proved successful in every case I attended, where the feet had not already become warm, while the legs and body remained cold.

This is a symptom which my whole experience teaches me to consider as a sign of actual death. In this most authors of experience bear me out, and I have invariably found that every interference with the patient who presented this fatal symptom only increased the spasms and suffering, and hastened the consummation.

Almost every intelligent author on this subject has classed cholera with the cold fit of ague—as, indeed, the whole of its features render nearly inevitable; and viewing it in this light,

the rationale and use of bleeding, as recommended by Mr. Bell and other authors, could not be better laid down than it is in his work on Cholera Asphyxia. Yet among these authors I have searched in vain for a single statement that cholera is—what I am satisfied it will invariably be found to be—a congestive ague of quotidian type. All whose works I have read consider it as, *in its whole course*, merely the cold fit of an ague, and that the fever which occasionally succeeds to it on recovery is the hot stage.

In my belief, no single paroxysm of ague of any kind ever occupied more than twenty-four hours in passing through all its stages, and, according to my experience, (whenever its progress is sufficiently slow to run that course) invariably completes an entire paroxysm within that period, consisting of the congestive or cold stage, and the remission. The stage of reaction which follows congestion can scarcely be said to exist in cholera, and the sweating stage, or stage of relaxation, is only occasionally perceptible, being so little marked as to be nearly undistinguishable from the short period of remission or intermission, but in every case of the epidemic which I had most opportunity of observing, there was invariably a diurnal remission and quotidian accession; and I am greatly inclined to believe this universal in all forms of cholera, where not prevented by previous death or cure.

This, sir, will doubtless appear to you a very bold assertion, and I am aware that it is one which, without the stethoscope at the bed-side of the patient, will be most difficult to verify, seeing that the chilliness of the surface is almost as great in this stage as in that which precedes it: at the same time it is very valuable, and will at once indicate a principle for the guidance of the practitioner, which will induce the utmost confidence in his plan of treatment.

The symptoms of these stages are so little marked as to require the most attentive observation to distinguish them, and until the opportunity shall present itself of actually looking for them, I do not expect to be credited, and all that I can hope for at present, from those most conversant with the disease, and who have not as yet en-

* Vide Medico-Chirurgical Transactions, for 1842.

† Vide British and Foreign Medical Review, 1843; a paper on Congestive Ague, or Fainting Fever, written for the Russian Government by the author.

tertained this view, is, that they will at least give it their consideration, and try to recollect whether in the more protracted cases that have fallen under their treatment, they have not observed that the patient, after tossing about for many hours in an agony of suffocation, seems at last exhausted, and after long jactitation and continuing to throw off every covering, he at last for a short period remains quiet and submits to the load of the bed-clothes. This temporary repose is in most cases almost the only symptom, except a more tranquil action of the heart, that marks the intermission, and forms the most obvious and almost the only guide to the essential part of the treatment of a severe case. In a very short time this period of comparative tranquillity ceases—the patient begins again to yawn, to throw up his arms like one bleeding to death, and in a few minutes more to toss about again, and show every symptom of suffocating agony.

These symptoms of the return of the congestive stage have, in the mass of my cases, appeared exactly twenty-four hours after the first accession, in-somuch that I invariably made a point of seeing my patient some time before the hour of the commencement of the first attack, and selected it as the moment for the successful use of the lancet, where that fearful but powerful remedy was necessary. But does it indeed require all the sudden and perfect restoration to health which attends its use, to compensate for the first anxious moments of suspense until the blood begins to trickle, or to reconcile the practitioner to such a measure? for when the first few drops ooze from the wound, they seem the harbinger of immediate dissolution; but when its flow is once established, and the patient is at once restored to health, no triumph of art and just principle can exceed it. Latterly, however, I was not in the habit of waiting so long: when the repose of the patient had been well marked for a short time, I bled, with much less difficulty in obtaining blood—with much less struggle and danger to the patient, and with equal success—forestalling, instead of combating, the anticipated period of fatal congestion.

In the remittent, and afterwards in the intermittent fevers which preceded

the appearance of cholera in 1842, I found quinine alone, so far from relieving the symptoms, invariably aggravate all of them. I was led by circumstances to administer it in combination with iron, with complete success; and when by almost insensible transitions the epidemic merged into cholera, I continued the same practice. I had the pleasure to find that the first doses of a combination of sulphate of quinine, sulphate of iron, a few drops of sulphuric acid, and often a little sulphate of magnesia dissolved in water, immediately checked the vomiting and diarrhoea; and this I have found equally successful in the only case of true cholera I have met with in England. It occurred in autumn of last year. The woman, who had previously suffered from the epidemic of 1833, was attacked on her way from Crewe to Manchester, and had been labouring under cholera for eight hours. I found her cold, blue, purging and vomiting the rice-water evacuations, and cramped, with cold clean tongue, and feeble pulse. She had taken large doses of morphia, which were immediately rejected; but the first dose of the above medicine checked the vomiting, and she was well in a few hours.

In all the mild cases in Persia this remedy was of itself sufficient to cure: it was repeated very frequently in general, but some of the most rapid cures I afterwards learned had been effected by swallowing at once the whole of what I had intended for nine doses. Its good effects were generally immediately indicated by diminished anxiety, returning warmth, proceeding from the chest to the extremities, and recommencing secretion of urine; but in cases of severer character it was found necessary to relieve the congestion by the abstraction of blood from a vein; and in doing this all depends upon the period at which bleeding is resorted to. If early in the congestive stage, or just previous to its second accession, it is invariably successful; if just as the congestive stage is passing off, when the pulse begins to require a little power, it is invariably fatal.

Before proceeding further, or considering the appropriateness or the contrary of the remedies most lauded in cholera—viz. opium, stimulants,

antimonials, artificial heat, or cold affusion,—it will be necessary to consider what takes place in an attack of cholera, that, from its etiology, a theory of treatment may be deduced to point the indications and to defend the treatment which I have ventured to advise; for, though arrived at rather by practice than by theory, it is impossible that it can command attention unless borne out by reason.

1st. With many able authors, I hold cholera to be merely a form of ague; and, in addition, I maintain its type to be quotidian.

To determine the nature of ague, therefore, if this position be true, is to determine both the nature and treatment of cholera. To do this, it is necessary to have a clear conception of what is really essential in an ague.

In the first place, I may venture to premise that I have enjoyed very ample opportunity of seeing ague in every variety of type and degree of severity; yet I have never seen a single attack of any kind of ague in which the whole cycle of its stages—that is, in which each individual paroxysm—was not completed within twenty-four hours. I have often witnessed several paroxysms completed within that time, but never one incomplete; and I have never met with a description of an ague in which the paroxysm exceeded twenty-four hours in duration, except where the author would appear to have considered Asiatic cholera to be such an ague.

2dly. The congestive or cold stage is the only essential which is never wanting in ague. It may be severe or slight, partial or general,—be with or without shivering*; but in ague, and every disease allied to it, such as masked and misplaced agues, as they are called, periodical headache, and neuralgia, and all the remittent fevers I have yet met with, this stage is never wanting, though sometimes obscure. The second or hot stage may or may not occur; reaction may, and often does, take place quietly, and without fever, and unsucceeded by a period of

relaxation or sweating. This condition frequently occurs in what is called the fortnight ague—a form with which all who served in the late campaigns in Scinde are well acquainted, where the shivering is severe and hysterical, but where the febrile and sweating stages are often entirely wanting; and yet this is the form most remarkable in its periodicity, and in its return, for one or more days, every fortnight, just previous to the lunar changes.

In other forms, more especially the quartan, all three stages generally prove exceedingly severe, and in this form the period of relaxation may perhaps pass the twenty-fourth hour from the accession, but I have not seen it do so, and I should be inclined to define ague as a paroxysm of congestion of the internal veins, subsiding within twenty-four hours, and often followed by febrile action and relaxation of the capillaries. It appears to consist in a gradual change in the action of the extreme capillaries, and apparent constriction of them, by which the blood is rapidly driven inward upon the great veins. When this has reached to such a point as to oppress the action of the heart, yawning first, and then shivering, or a sense of suffocation and pain in the præcordia, are the indications of oppressed circulation, and of the commencing effort of the heart to overcome the mass of blood which is stifling it. If, by the application of tourniquets to the limbs, or by bleeding, part of the blood which is rushing from the extremities to increase this congestion is prevented from reaching the great veins,—the heart, excited to increased action, is enabled by this relief more quickly to overcome the obstruction and restore the balance of the circulation, and the paroxysm passes off. If not thus mechanically aided, the heart, after a severe struggle to maintain the circulation during the period of constriction, is at length relieved, by this nervous disturbance or spasm of the capillary circulation passing off of itself, and then the heart and arteries, so long excited by the struggle, maintain for a time their increased action after the obstruction in the capillaries is removed, and produce apparent febrile action. Presently this excitement subsides, the vessels become relaxed, and sweat succeeds. The vessels continue

* I have latterly been in the habit of considering shivering as a favourable symptom—an indication that the power of the heart is sufficient to overcome the congestion. If this be insufficient to produce shivering, the after-symptoms are severe: if such as to overpower this symptom, the congestion itself is always dangerous.

in this state for a longer or shorter period, according to circumstances, till they at length recover their ordinary tone and action in the intermission. This fever, however, is not fever properly so called, but reaction; and the sweating not critical or essential, but relaxation. The cold stage is alone essential, and is the physiological cause of the subsequent stages.

If this be admitted, it is obvious that our whole attention must be devoted to the study of the phenomena of aguish congestion, in its commencement, its progress, its mechanical effects on the organism, and the natural means by which it subsides or is overcome; and, lastly, in its tendency to periodical return, if we would obtain a clear perception of the nature of cholera. Before, however, we enter into these considerations, and the ratio medendi, it may be permitted to us to diverge for a moment to consider the question of contagion, and inquire how far ague and cholera resemble or differ from the whole class of contagious fevers, so as to justify us in chiming in with the popular opinion of its infectious nature, or in entertaining views to the contrary; for where popular feeling is strong on such a subject, abundant evidence is easily found to support their opinion of apparent facts.

Of the exciting cause of cholera we know little or nothing, and not a great deal of ague. The latter is known as a disease of marshy countries, but it is also the most prevalent disease in the driest countries in the world; for example, the whole of central Asia, the deserts of Arabia, and of Africa, of some of the most elevated regions of Italy, &c. &c. A hundred years ago ague prevailed throughout Britain and Ireland, but it has now equally ceased in the most improved and well-drained parts of Britain, and the most neglected of Ireland; and no one can say that an improved mode of living among the peasantry of that country is the cause of its disappearance; yet no one considered ague infectious. Marsh miasm, then, if a cause, is evidently not the only cause of ague; and among others, one of the most obvious, in Eastern countries at least, is subterranean volcanic action; whether by means of exhalations, or the electrical effects of subterranean

chemical action, it would be difficult to say, but I have seen it and remittent too often precede or arise with earthquake, to have any doubt on this subject. Whatever its cause, however, most people are inclined to attribute it to a terrestrial origin; but, however we view it, it must be conceded that it was once endemic in England, and is not so now; yet ague will march across countries as steadily and extensively as cholera.

The remittent fever of 1842, in Scinde, ending in ague, proceeded in a direct line through Beloochestan, right across Persia, Georgia, Circassia, and Southern Russia, and gradually losing more and more of its intermitting character, appeared in Edinburgh as a modified remittent, with a tendency to periodical relapse, and is described in your journal under the title of the Scotch Epidemic. This remittent tendency continued in 1844 and 1845 to influence the type of fever in Scotland, Manchester, and Liverpool in these years.

In 1843, in the Asiatic part of its course, this remittent and intermittent assumed the shape of cholera. In 1846-7, cholera there became a scourge, while in this country we only slightly perceived the influence in the increased tendency to intermitting neuralgia, and the secretion of oxalates in the urine, &c. If, then, cholera is propagated by contagion, is it possible that its approach alone, and before its advent, should so markedly be perceptible in the character of the prevalent diseases? or could it continue to influence them after its disappearance, when confessedly no contagion prevails? Yet it has been remarked by some of our most experienced authors that, ever since the first approach of cholera, the fevers in this country have materially changed in their type, and the use of the lancet in fever, formerly so beneficial, has now become obsolete. These considerations tend to show that (ague and cholera being so nearly allied) there is no reason why cholera should not for a cycle become as endemic in this country as ague formerly was, and as it has, in fact, become in India since its appearance there in 1767.

But let us examine the action of the poison, whatever it may be, that

produces ague or cholera, in its effects on the system, as compared with those of contagious fevers, including the exanthemata, and other fevers produced by animal poisons, and whether there is any evidence of its elimination from the system by similar febrile action.

I presume I shall not be going too far in considering continued fevers as the reparative process by which nature eliminates the poison by appropriate organs—the skin, the bowels, &c.; and it will not invalidate this position, that death occasionally occurs through the violence with which this action falls on a particular organ; for if the organs fail to eliminate the poison, and thus protect the nervous centres, death takes place through the nervous system.

It is not so in ague and cholera: in the latter the brain is the last to die. There is no evidence of any poison being eliminated by the action, or any special secreting organ being affected. An ague fit will sometimes pass off without fever or sweating, a cholera attack sometimes without even purging, and leave no evidence of a poison lurking in the system. Whatever the cause of the disturbance of the circulation that produces the congestive stage in these diseases, the fact of an immediate cessation, or a complete intermission of its effects, is almost conclusive that it cannot be, as in other fevers, a poison circulating in the blood, exciting a reparative action, but the effect of a cause acting on the powers which circulate the blood, independently of a change in the blood itself, and most dissimilar to anything that we perceive in the ordinary course of contagious fevers.

We can scarcely doubt that the congestion of ague takes place through an influence of the sympathetic nerve on the minute capillaries; but till we are better acquainted with the powers which circulate the blood*, with the

changes which that fluid undergoes in passing through them, and with the effects of electricity upon them, we cannot expect to arrive at a knowledge of the exciting cause of these diseases; but we do not, in the nature of the disease, find a single argument for believing that either ague or cholera eliminate from the system any morbid poison to render them communicable from man to man; although in both we find some reason to believe that that powerful agent, electricity, of which we are as yet so ignorant, has much to do with them, and perceive some evidence of a connection with the terrestrial currents as affecting their periodicity, and with the electrical phenomena that accompany the lunar changes, &c. &c., as affecting their relapse.

The direct evidence in favour of non-contagion has always appeared to me infinitely to preponderate over that to the contrary; and I know none more conclusive than the fact of its penetrating the triple cordon sanitaire established by the Prussian Government on the Oder in 1831 at exactly the same rate (four German miles a day) that it proceeded at both before and after its encountering what was expected to prove so formidable a barrier to its progress.

While on this point, however, it would be wrong to pass over a remarkable point which many cases published in the periodical medical journals confirm—that where fever is sporadically induced by accumulated filth, especially decaying vegetable matter, such as stable manure, the type of fever that results is the most exaggerated specimen of the type of the fever that prevails at the time; and thus it happens that people from the same neighbourhood are so rapidly affected by a prevailing non-contagious malady as to present every appearance of having received it by contagion.

* Sir Charles Bell, in his Essay on the forces which circulate the blood, has shown that some peculiar condition of the inner coats of the vessels, and some vital property, must be in operation during life to prevent coagulation of the blood; and to obviate that capillary attraction, which prevents even water penetrating the capillaries of the dead body, though urged with the utmost force that the vessels will bear without rupture. Professor Sir John Leslie, in his lectures on Natural Philosophy, used to exhibit a remarkable experiment which bears on this sub-

ject. Filling a thin wooden cup with mercury, no particle of it penetrated the pores of the wood, till, by passing a current of electricity through the cup, he overcame the capillary attraction, and the mercury fell through it in a shower. I have successfully availed myself of this principle in making mercurial injections of the rete testis, suspending from the prime conductor of an electrical machine. It does not seem too much to believe that the sympathetic nerve may exert some such power on the blood-vessels.

ON
SCROFULA:

Paper read before the Brighton and Sussex Medico-Chirurgical Society, Oct. 7th,

By Dr. KING, Cantab., President.

IN the following remarks I shall confine myself to a view of constitutional scrofula; the signs by which it is known; the causes in which it originates; its effects in families and individuals subject to it; and the physiological and prudential maxims which follow from the preceding statement: I shall not enter into any detail of the treatment of the disease.

First, the signs by which it is known.

The scrofulous constitution may be called a defective and abnormal one, consisting in an imperfect state of the vital powers, the principle of vitality (whatever that is) causing an imperfect development of the physical structure, both in form and substance. There is an imperfect deposit of bony matter to form the skeleton, and too great a proportion of animal matter. The bones are, therefore, too soft to hold the contents when that is required, as in the head, and too soft to support weight and endure force, when that is their office, as in the rest of the body, the spine, ribs, pelvis, and extremities. All the cartilaginous parts are increased in quantity and size; the extrineties of the long bones are large and soft, and the interstices filled with serum and jelly instead of earthy matter, and the bones are either longer or shorter than the average.

The head-bones being soft give way to the pressure of the brain, which is affected more by the influence of gravity than its own vitality, and becomes mis-shapen. When fluid collects within, the shape is still more affected, and in those who recover, the disfigurement remains for life.

The malar bones are often too prominent, and the lower jaw too large; the palate of the mouth is often imperfect; the dentition is tardy, difficult, and irritating, and the teeth imperfectly formed, discoloured, friable, only half enamelled, and readily decay; the two upper incisors often unnaturally large and prominent; the upper lip partakes

of the imperfection of the palate, and is often fissured. Frequently the ears are deficient, the cochlea being wanting, and sometimes the internal meatus. The thorax is deficient in size and deformed in shape; the ribs bent in, and the sternum protruding, and its divisions imperfectly united. The abdomen is too large and protuberant, from the flabbiness of internal parts and mesenteric enlargement. The bones of the spine, partaking of the deficiency of earthy matter, are too soft to support the head and chest, and therefore yield as well as their ligaments. The sacrum is often pushed towards the pubes, producing a narrow pelvis; the ilia are often twisted, from the same causes; the arms either too long or too short for the rest of the body, and the hands mis-shapen; the wrists, like the other large joints, too swollen.

The lower extremities, like the upper, are too long or too short, badly supporting the trunk; the knees large, and the bones badly fitted to each other, forming the knock-knee, or the reverse; the tibia, and sometimes the femur, bending beneath its weight, and the feet splay-footed, or club-footed, in various degrees.

The soft parts partake of the same want of vitality. The brain is too large or too small, too soft and pulpy, and heavy in its functions, and liable to effusion from vascular debility; though sometimes its intellectual functions are more active than common, but this is the exception and not the rule; the nerves do not seem so defective in carrying sensations or motions as the brain is in its functions. The vascular system is generally relaxed and weak, and what used to be called leucophlegmatic; the muscular fibre is weak and relaxed, and wanting in tone and vigour. The hair is generally of a light colour, and thin in texture and scanty, and liable to fall off, independent of any disease, from a low vitality. The eye has a peculiar expression, generally heavy, languid, inexpressive; while sometimes it has an animated expression of a peculiar kind, known to medical men, and may be called the scrofulous eye; at others it foretells consumption by itself; as a contrast to other signs of imperfection, the eyelashes are often long and beautiful.

The stature varies from the dwarf to the apparent giant, when a boy may

be six feet high at 15 years of age ; but such excess of height is never accompanied by corresponding muscular strength, and well-developed limbs and features : they are always puerile, and almost effeminate. The appearance of the child is often that of the little old man ; while the appearance of the man advanced in life is often that of youth and boyhood, without its vigour.

Sometimes, but rarely, the appearance is that of plumpness and freshness in childhood, what the French call *embonpoint*, and the parents are delighted with what appears to be a beautiful child ; but the hypertrophy of the cellular membranes is delusive and morbid, and generally even then accompanied with organic infirmities, which the medical mind detects as the forerunners of future constitutional disease: the plumpness may truly be said to be deceitful, and the beauty vain.

These are among the outward and visible signs of what ought to be called the scrofulous constitution, that which is liable to all sorts of aberrations from the standard of physical perfection, and to which as the primitive cause many diseases ought to be referred which at present are considered to be specific and independent. What the vital cause of that constitution is we cannot at present declare, but it is sufficient if we ascertain as a fact, that certain physical peculiarities and certain diseases follow from that constitution, just as mathematicians determine the laws of the heavens from the principle of gravity, though they cannot discover what is the cause of that principle.

Having enumerated some of the external signs by which we may know the presence of the scrofulous constitution, and which may be called the effects of that constitutional principle, we will mention other effects upon the internal structure which take the names of the diseases to which the various structures and organs are liable.

The deposit of tuberculous matter is one of the most obvious and leading effects of scrofula, and has been that to which some writers have confined their notion of scrofula. This is, however, a very limited, and partial, and imperfect view of the subject: it is only one effect out of many to which the one cause gives rise. There are

certain diseases in every organ and texture, and in the functions of every organ and structure, which are owing to this predisposing cause ; and those diseases should be considered as exhibitions and developments of this one cause, just as much as the motions and irregularities of the planetary bodies are exhibitions of the one cause of gravity.

Again, when diseases arising from specific circumstances attack the body, their history and consequences (which are a part of the history) will be very different, according as the constitution is scrofulous or unscrofulous.

Scrofula originates diseases in all the organs, whatever be the surrounding circumstances, and it modifies all diseases attacking the organs from foreign causes ; so that the accidental disease which is fatal in a scrofulous constitution, as small-pox, hooping-cough, measles, and scarlet fever, may be mild and harmless, and easily cured in an unscrofulous one.

The diseases of the head to which the scrofulous constitution gives rise are, hydrocephalus, tumors, tubercle, abscess, epilepsy, insanity, hysteria, amaurosis, cataract, fungus, deafness, otorrhœa, conjunctivitis, lippitudo, &c. ; lupus, oxœna, coryza ; diseases of the neck, tubercular glands ; diseases of the thorax, disease of the heart and lungs ; diseases of the abdomen, disease of the œsophagus, stomach, bowels, worms, pancreas, liver, kidneys, bladder, uterus, mesentery ; various diseases of the scalp and skin generally ; lastly, of the joints.

Scrofula is like an ill-tempered man—always grumbling and growling under the ordinary circumstances of life, and breaking out into insane fury and passion under extraordinary circumstances. Scrofula is like a dam of ice thrown across the mouth of a Swiss valley ; the waters accumulate behind it ; they find a partial vent through crevices insufficient to drain them off ; they gradually augment into a lake, the barrier gives way before the irresistible mass, and a deluge of ruin and destruction follows.

The human being who comes into the world with a scrofulous constitution is liable to all sorts of petty illnesses from his birth upwards, till water in the head, or mesenteric disease, or phthisis, or disease of the heart, or

insanity, put an end to an unfair struggle which ought never to have begun: all men are doomed to die, but the scrofulous child is born and lives in the arms of death.

In the scrofulous constitution we can predict the general diseases to which the individual will be liable, and sometimes that which will prove fatal; from the constitution of the parents we can predict the diseases of the children; and from those of the present generation what was the constitution of the ancestors; and when a marriage takes place, we can predict, as I shall shew hereafter, the diseases of the children.

Many forms of indigestion, dyspepsia, mal-assimilation, anorexia, general debility and want of tone and power, without any organic disease, but when the disease is merely functional, are dependent upon a scrofulous diathesis.

It is supposed that scrofula affects one-fifth of mankind: that one half of those who are born scrofulous perish in infancy; that a quarter of scrofulous fetuses die in utero; and that not more than one scrofulous person in five lives to be married.

It is evidently the intention of nature to get rid of that part of her work of which she disapproves. Scrofula is a degenerating principle which admits of no remedy; its effects may be patched up, but they cannot be cured; they go from bad to worse. Scrofulous parents necessarily produce scrofulous children, who are a misery to themselves and to every one around them, and the best thing which can be done is to prevent their perpetuating their race: if they have not sense, or prudence, or principle, to do this themselves, by abstaining from marriage, nature will do it for them in various ways, but chiefly in that of phthisis. Louis calls phthisis the most relentless enemy of the human race.

In this he is quite mistaken. It is the great physiological friend of the race, which exterminates those who would otherwise ruin the race by making every man a cripple. We should all go upon crutches; and there would not be a sound man to stand in the breach, nor a sound head to conduct business. But nature does not allow the direct transmission of scrofula to proceed as a general rule beyond three or four generations. It

is then cut short by phthisis, or other organic forms of scrofula or by abortion or by non-conception.

I shall now state the different sources of the scrofulous constitution in the form of propositions, and illustrate them by cases stated as concisely as possible.

PROP. I.—The grand source of scrofula is the direct hereditary principle.

1. A girl, aged 19, was tubercular. Suffered from ophthalmia from the age of 5; had coryza, and nasal incrustations. The mother died of phthisis at the age of 30. Five brothers and sisters died in infancy. One died at 19 of phthisis; one had caries of the lower jaw, constant catarrh, and was feeble in mind and body.

2. A lady miscarried once, and then had six children. Five died early; and the only survivor suffered amputation of the leg for white swelling of the knee.

3. Out of seventeen scrofulous children in one family, fourteen died under five years.

4. A lady who died of phthisis had twelve children. Eleven died early: the survivor had white swelling of the right foot.

5. A father had eight children, and then died of scrofula: seven of the children died of it early.

PROP. II.—Scrofula is also hereditary in the collateral branches when it is latent in the direct ones.

1. A young man had white swelling of the right elbow: parents appeared healthy, but his cousin had scrofulous disease of the ankle.

2. A girl aged 8 had a scrofulous sore of the left cheek. Her cousin died of caries and tubercles.

3. A lady aged 30 had scrofulous disease of the knee, with ulcerative tubercles in various parts of the body. She died at 33. She had had three children, who died in the first month. One first cousin had lupus, and another had caries.

4. A girl aged 8 had scrofulous disease of the hip. Her mother's sister had four children, who died early of scrofula.

PROP. III.—When second marriages take place, if both parents are healthy, the children will be unhealthy: if either parent be scrofulous, the children will be scrofulous.

1. A healthy woman had healthy

children by her first husband, who was healthy. She married a second husband, who was scrofulous, and she had by him scrofulous children.

2. A healthy man had six children by one wife all scrofulous, and six by a second all healthy.

3. A healthy man married two sisters, who both died of phthisis. He had children by each. All were scrofulous, and died early.

4. A healthy man had four children by a first marriage, all healthy; three by a second, all scrofulous. The second wife had two children by a former husband, both scrofulous.

5. A healthy man had three wives, and children by all. Two were healthy, and their children healthy; one was scrofulous, and her children scrofulous.

PROP. IV.—Persons who have been scrofulous in youth may appear to have been cured, and to have got into good health, but the constitutional taint remains, and the children will be scrofulous.

A woman had ulcerated cervical glands in youth. These were cured: she appeared to be well, married, and had four children. One died aged eight months; the other three had ulcerated cervical glands; two of them had ophthalmia, and one had chronic bronchitis.

2. A lady had ophthalmia, and specks on the cornea, in youth. She was cured, but had red and swollen eyelids. She married, and when 32 years old had had five children: four died in infancy. The remaining daughter, aged 3, had ophthalmia, with specks on the cornea.

3. A man had had when young a scrofulous ulcer on the sternum. He got well, and married. His son had a similar ulcer in the same place.

4. A lady aged 63 had white swelling of the knee when young, and was cured or got well. She married at 20. She had five miscarriages in succession, with obstinate sanguineous discharges. Two years after the last miscarriage she had a daughter, and the next year another. Both married at the usual time. The elder had two children: one died aged 8 months. The other had white swelling of the knee. The children of the second daughter all died young.

PROP. V.—Phthisis is a form of the

scrofulous constitution, and its most fatal form. It is its great sledge-hammer. Sydenham had advanced so far in pathology as to call phthisis "scrofula of the lungs." Portal was of opinion that congenital phthisis, "phthisie d'origine," was scrofulous. Bayle and Laennec say the same, but less decidedly, which to our eyes appears strange. An eminent writer of the present day may be quoted as a proof that medical men have not at present very clear ideas upon this subject. He says, scrofula is a form of cachexia—i. e. cachexia is the cause of which scrofula is the effect. It would be more correct to say, scrofula, or the scrofulous constitution, is the cause of which cachexia is the effect. Cachexia is a form of scrofula. Cachexia has many causes, of which a very important one is scrofula. He says, "Scrofula and gout are hereditary: show themselves at certain ages (which is more true of gout than of scrofula), have each a peculiar morbid matter (speaking as if that matter were the cause, not the effect), and are easily transferred from part to part." Gout is so, but not scrofula; for white swelling, when it attacks one knee, does not suddenly quit it, and go to the other. So of the cervical glands, mesenteric glands, and phthisis. I have seen so many instances of scrofula and gout in the same family that I have long concluded gout to be a form of scrofula.

He says, "Blindness is a common effect of scrofula; so are diseases of the joints, and phthisis:" which is not speaking as if he considered these diseases to be various developments of one constitution, the scrofulous one, but only connected with it accidentally.

Again, he says:—"Cancer is a more rare disease than gout or scrofula:" which is speaking as if cancer and scrofula had no more connexion than cancer and small-pox. I have long considered cancer to be a modification of the scrofulous principle.

Again, he says:—"Cancer is peculiar to the lymphatic temperament." He does not define this expression. It always appeared to me to be very indefinite, and it ought now, I think, for that reason to be banished from medicine. If it means anything, it means a modification of the scrofulous principle, whatever that is.

Again, he asks:—"Does cancer depend on the solids or fluids?" Now, if we transfer cancer to the category of scrofula, as the old logicians would have said, the question will be, does scrofula depend on the solids or fluids? And I believe all medical men would at once say, scrofula is a principle beyond the solids and fluids, and governs them, and gives them their peculiar manifestations. Thus we find a common tie among a number of diseases hitherto supposed to be insulated from each other; and the various questions of causes are reduced to one, viz. what is the scrofulous principle, and why does it develop itself sometimes in this form, sometimes in that?

[To be continued.]

SPINA BIFIDA.

FISSURE OF THE OCCIPITAL BONE. DEFICIENCY OF THE POSTERIOR PORTIONS OF THE RINGS OF THE ATLAS AND THE DENTATUS. ANALYSIS OF THE FLUID CONTAINED IN THE SAC. POST-MORTEM EXAMINATION.

By CHARLES POOLEY,
Surgeon, Cirencester.

On the 10th of August, Mrs. W., æt. 39, a strong healthy woman, was delivered by a midwife of her fifth child, on whose occiput was attached a large pendulous tumor, about the size and shape of a small gourd. The labour is described as more lingering than usual, and was followed by considerable flooding. Her unusually large size during pregnancy, together with the strong tumbling movements of the child, and the existence, as she thought, of two distinct heads, led the mother to suspect she was big with twins. She has had four children, all of which are living and healthy, but she has remarked that their heads were particularly large at birth. The tumor was semitransparent, highly vascular, fluctuating, and being contiguous with the scalp was partly covered with hair; a distinct fissure could be felt through it in the inferior portion of the occipital bone, through which the fluid had evident communication with the interior of the cranium, as gentle pressure on it raised the anterior fontanelle. It appeared to produce no inconvenience in the movements of the head, nor to per-

ceptibly influence the senses of taste, sight, and hearing; the child took its food as usual, and the bowels were regular and the secretions healthy; firm pressure, however, caused rigid contractions of the hands and arms, and produced strabismus. As there could be no doubt of the nature of the contents of the sac, my partner, Mr. Thomas Warner, proposed to puncture it with a grooved needle, and on the 14th of August, about twenty ounces of a limpid whey-like fluid were drawn off: no ill consequences followed the removal of the pressure, and the wound healed kindly.

Mr. Henry Noad, to whom the fluid was submitted for analysis, found it to be neutral to test-paper, or if there was any reaction it was feebly alkaline: sp. gr. 1.036. It contained nothing but albumen, chloride of sodium, and soda, combined with some organic acid, but not a trace of phosphoric acid. Evaporated to dryness and ignited, it left a saline residue which was thoroughly alkaline, but in which nothing could be detected but chloride of sodium and free soda. The quantity of albumen was not very great; the fluid did not become turbid by boiling, but on the addition of nitric acid a flocculent precipitate subsided. He thinks it probable the soda, which was stated above to be combined with some organic acid, existed in combination with carbonic acid only.

The sac having gradually re-filled, on the 14th September it was again punctured, and about twenty-six ounces of the same sort of fluid were let out. No inconvenience arose afterwards, but the child rapidly emaciated, and lithic acid sand was passed in the urine, and increased in quantity as the child became feebler.

On the 10th of October, exactly eight weeks from its birth, after lying in a half-convulsed state for some hours, it died.

On cutting into the tumor after death, its parietes were found to be considerably thickened; its inner surface was sacculated, and lined with a soft, smooth, vascular membrane, resembling mucous membrane: it contained about eight ounces of a greenish coloured serum. On tracing its connection with the interior of the cranium, a fissure nearly two inches in length, and three-quarters of an inch

wide, was seen, dividing the occiput from the occipital protuberance to the foramen magnum, closed by a dense fibrous membrane, except at the inferior portion, where a canal, about the size of a large quill, indicated the channel of communication. The brain was soft and pulpy, and its cavities bore marked evidence of having been distended. There was no perceptible difference in the colour of the white and grey matter. The medulla oblongata and spinal cord were firm, and no irregular distribution of the spinal nerves could be detected. Anteriorly the atlas and the dentatus were firmly united in one homogeneous cartilage, without the least attempt at any ossific deposition to be seen. Posteriorly the ring of the former was entirely absent as far as the articulating processes; about two-thirds of the ring of the dentatus was wanting. The spinous process of the third cervical vertebra bifurcated, that portion on the left side being considerably thicker and longer than the right, the interval between the two being filled up by a thick ligamentous membrane. The fourth spinous process was also incomplete, the right portion riding over the left. In the fifth, union was perfected. In all other respects the child was well made.

ACCIDENTAL CURE OF EPILEPSY BY OIL OF TURPENTINE.

OCCASIONALLY turpentine has done good in epilepsy by virtue of its anthelmintic properties. I know that a physician of my acquaintance cured a case of epilepsy in this way somewhat to his own surprise. Without having in his mind any notion of worms, he thought it might be as well to purge his patient, who had laboured for some time under epilepsy, with the oleum terebinthine. The patient, who was the brother of a person holding at present high office in this country, was residing some miles out of town. In the middle of the night the doctor was summoned to him in a great hurry; the messenger said he was supposed to be dying. He was only intoxicated, however, by the free dose of turpentine he had taken. The next morning he passed into the closet-stool a large tape-worm: he has never had epilepsy since. The late Lord Hardwicke, father of the present Earl, had epilepsy, and he, too, got rid of his epilepsy and a worm at the same time.—*Solly on the Brain.*

MEDICAL GAZETTE.

FRIDAY, NOV. 5, 1847.

THE Quarterly Return of the Registrar-General, which has just been published, contains some interesting information respecting the present sanitary condition of the metropolis, and of the principal towns and cities of England. The population included in this return is very nearly *seven millions*; hence it may be taken as representing on a fair average, the influence of disease, and the progress of mortality throughout England and Wales. The deaths registered in this quarter (ending Sept. 30) were 1948 *less* than those registered in the corresponding quarter of 1846, but more by 7007 than the corrected average of the last nine years. It is, however, gratifying to know that, on the whole, there is a slight improvement in the general health of the country. The metropolitan districts must be excepted from this favourable estimate; for it appears that in London there has been, during the last quarter, no sign of improvement. The deaths in the metropolitan districts for the three last September quarters were respectively—

In September 1845	.	.	10,987
" 1846	.	.	12,601
" 1847	.	.	13,187.

The following is an abstract of the remarks which accompany the return:—

"In the first nine weeks of the quarter the mean temperature of the atmosphere, and of the waters of the Thames, was above 60°; the mortality in London from diarrhoea, dysentery, and cholera, rose from 17 on the first to 188 on the seventh week of the quarter, and gradually fell to 107 on the last week. Typhus raged with unusual virulence. The weekly deaths were never below 50, and in the third

week of September, 111 persons died of this disease. The weekly average was 30 for the same quarter of five preceding years. The epidemic of fever has been more fatal in Lancashire than in London. In Manchester, Salford, and Chorlton, 4154 deaths were registered from all causes. Diarrhoea and fever were the prevalent diseases. Typhus carries off men and women in the prime of life. Diarrhoea destroys more children, and becomes dangerous to adults in the form of cholera*.

"Liverpool, created in haste by commerce—by men too intent on immediate gain; reared without any very tender regard for flesh or blood; and flourishing, while her working population was rotting in cellars—has been severely taught the lesson, that a part of the population—whether in cellars or on distant shores—cannot suffer without involving the whole community in calamity. In itself one of the unhealthiest towns of the kingdom, Liverpool has, for a year been the hospital and cemetery of Ireland. The deaths registered in the four quarters of 1846 were 1934, 2098, 2946, and 2735; in the three quarters of 1847 ending in September last, 3068, 4809, and 5669! The population of Liverpool was 223,054 at the last census. It is impossible to represent more cor-

rectly than is done by the short notes of the Registrars, the piteous spectacle which this great town presented—with the floating lazarettos on the Mersey, the workhouses crowded with destitute paupers, the three large 'sheds' which will hold 300 persons, nearly full of patients at the present time, and the fever getting more prevalent among the upper classes.' It will require all the energy of the inhabitants of Liverpool, and the utmost resources of science, to place the health of the town in a satisfactory condition.

"The mortality remains high in Birmingham, Dudley, Wolverhampton, Shrewsbury, in many of the towns of Lancashire, in Leeds, Hull, York, and Sunderland. The returns from the other towns of the kingdom present nothing unusual, the mortality being much the same as in previous years. This refers to the relative mortality. The absolute mortality is always higher by from 10 to 50 per cent. in towns than in open country districts. This is illustrated by a comparison of the deaths registered in London during the last 13 weeks, and of the deaths which would have happened if the rate of mortality had been the same as in Dorsetshire—one of the agricultural counties—in which the wages are low, and in which the condition of the labourer is far from what it is desirable that it should be. 3506 children under 15 years of age were destroyed in London, in addition to 3078 carried off by causes which may be supposed to be the same as those fatal in the country. The mortality is equal at the age 15—35, when London receives healthy recruits from the various counties. After the age of 35 the mortality is 45 per cent. higher in London than in Dorsetshire. If the chance that a man above 35 will die in the country during the summer quarter be represented by 2, the chance that he will die in London is nearly 3. It may be admitted that part of the London population is poisoned by alcohol, and that in their houses and persons they are dirtier than the country people; still the great excess of mortality, and, in part, perhaps, the intemperance and impurity, must be ascribed to the crowding, the want of water, decaying animal and vegetable matters unremoved, and the inefficiency of the sewers, which neither carry off the solid, liquid, or gaseous

"* The Registrar of Deansgate, Manchester, says:—'More children have died in the district during the last quarter under the age of five years, than in most other quarters: there have been deaths at all ages. This is an astounding fact, yet perfectly consistent with prior observation; if the general mortality be large, the infant mortality will ever be found to bear its due proportion, and the causes, in such a district as this, are perfectly obvious. In the calamitous season just passed, manufactures have been almost at a stand-still; food has been unattainable by the poor, for employment they had none; famine made her dwelling in their homes, and her attendant horror, typhus, relentlessly swept his victims to the grave. During the sickness, which either terminated in death, or rendered the removal of the poor to the fever-hospitals necessary, their offspring have been neglected and uncared for; some have sunk under the malady of their parents—others, deprived of the nourishment nature had supplied, have pined and wasted away, the victims of inanition, their glands diseased, and incapable of assimilating the incongruous food supplied to them. The disease of autumn has also done its work fearfully amongst them, no less than 103 deaths, almost entirely of children, being recorded from diarrhoea, under the drain of which the exhausted frames of the little sufferers rapidly sunk. In the close, ill-ventilated, and densely-crowded rooms where the poor hive together, contagious disorders make rapid progress, extending from one to another, and acquiring increased virulence from the filth and noisomeness with which they are nourished.'

matters, poured into or generated within them every day. If the chance of dying is increased from 2 in the country to 3 in London, the liability to suffer from epidemics is raised still more.

"All the diseases of the zymotic class—such as small-pox, measles, scarlatina, typhus, influenza, and cholera—have the remarkable property of becoming epidemic. After certain intervals of time, in which they are fatal to a smaller or greater number of persons in different places and seasons, great multitudes are suddenly attacked and destroyed in a given locality; the disease in this intense form involves the neighbouring population, spreads around the whole region, and sometimes travels over the tracks of human intercourse through the world. Little is known of the immediate chemical or vital causes of epidemics; but in given circumstances, where many are immersed in an atmosphere of decaying organic matter, some zymotic disease is invariably produced; where there is starvation, it is most frequently typhus; cold, influenza; heat, it is cholera, yellow fever, plague. At the mouths of the Ganges, of the Nile, of the Niger; in London, particularly up to the 17th century; in camps, in barracks, in ships, in prisons formerly; in Ireland, in Liverpool, in all our towns now, the circumstances in which zymotic diseases become epidemic may be witnessed. A city breathing an atmosphere perfectly pure may not be exempt from every epidemic; but observation has shown that such irruptions are unfrequent, and fatal to few persons of strength or stamina. Internal sanitary arrangements, and not quarantine or sanitary lines, are the safeguards of nations. A salubrious city in an epidemic—like a city built of stone in a conflagration—is exposed to danger and injury, but not to the same extent as the present cities of Europe, which are left without any adequate regulations for the health and security of their inhabitants.

"The great historical epidemics have diminished in intensity, and there appears to be no reason why they should not be ultimately suppressed, with the advances of the population among which they take their rise. Their origin is obscure, but influenza appears

generally to become first epidemic in Russia,—cholera in India. It is in India that the source of the latter disease must be attacked. If the health of India become sound, Europe might be safe, and hear no more of the epidemic which is now traversing Russia. The attention of the Indian authorities has for some time been directed to the subject. The Marquess of Wellesley, in 1821, effected improvements in Bengal. Mr. Martin, one of the Commissioners appointed by the late Government to inquire into the health of towns, addressed Lord Metcalfe, the Governor-General, on the sanitary improvement of Calcutta, in 1835; his complicated plans were promoted by that eminent statesman. Lord Auckland appointed a sanitary commission, of which Sir John Grant was the chairman; and thus procured a very able official report on the health of Calcutta, before the subject was touched at home. The other nations of Europe are beginning to take an interest in public sanitary improvements; and any plans found to succeed in England, will no doubt be carried out as speedily as possible in all parts of Her Majesty's dominions; for the vast population that owns her sway is intimately united. Asiatic cholera has taught us that the lives of thousands in England may depend on the condition of the Pariahs of Jessore."

The proportionate mortality according to age is a very interesting feature of these statistical inquiries. Of the 13,187 deaths in London, there were, at the following ages,

Below 15.	15—35.	35—55.	Above 55.
6584	1786	1983	2834.

It will thus be seen to what an extent the younger portion of the metropolitan population is swept off, since the deaths below 15 years of age were nearly as numerous as those of all other ages above this, being 6584 to 6603.

Taking the mortality observed in Dorsetshire for the September quarters from 1838 to 1844, we have the following comparative results for the deaths at different ages in an urban and a rural population :—

	Below 15.	15—25.	25—35.	Above 35.
In London .	6584	1786	1983	2834
Dorsetshire	3078	1709	1357	1955
Excess of mortality in London .	3506	77	616	879.

The total urban are to the rural deaths as 13,187 to 8109, making a difference of 5078; and it will be observed that this difference is at its maximum at ages below 15, the deaths in London at this period of life being to those in Dorsetshire in a proportion greater than two to one! We have in this, one of the strongest arguments for the immediate necessity of sanitary regulations.

We elsewhere insert* from a contemporary some very sensible remarks upon the present inefficient and inhumane system of providing medical attendance for the poor. The facts detailed by various speakers at the recent medical convention, are more than sufficient to show that there is no exaggeration in the statements hitherto published on the injustice with which the medical officers of Poor-Law Unions are treated by Government. That any attempt will be made in Parliament to deny the truth of these statements, does not appear to us to be at all probable. The necessity of an improved scale of payment will then be tacitly admitted; but a postponement of the matter will probably be required by Government, partly from the present aspect of political affairs, and partly from the alleged difficulty of substituting at once a permanent and better mode of remuneration than that which the profession owes to the ultra-economical views of the defunct Poor-Law Commissioners. It is an unfortunate part of the case, that while Boards of Guardians and rate-payers are amply represented in Parliament, medical men are

not represented. In spite of this, which we consider a great hardship to the profession, we trust that no attempt will be made to maintain the system of tender. It is very true that the *lowest* bidder for a vacant office of this kind is not always selected, but in some way or other, Boards of Guardians do contrive to obtain medicines and medical attendance at charges considerably below the market value. With a very large number of medical schools, and with sixteen manufactories of diplomas continually at work in the three kingdoms, there must always be "plenty of enterprising young men ready to undertake the healing missions of a Poor-Law Union at a remuneration one-half lower than the stipend actually given." Hence Boards of Guardians may, as matters stand at present, invariably reckon upon a number of low bidders. They think as little of the ruin which the system brings on the medical profession, and the injury inflicted on the poor, as the purchasers of linendraperies, sold at one-half of its manufactured value, think of the public and private misfortunes which must have befallen those who are really compelled to part with their goods at an "enormous sacrifice!" The abolition of the tender-system will be one of the first steps to improvement. As our contemporary argues, the maintenance of it indicates, in a humane sense, a want of feeling; and in a fiscal point of view, it is mistaken economy. The plan which it is proposed to substitute appears to us to be based upon equitable principles: but the consideration of this must be reserved for another occasion.

MEETINGS OF MEDICAL SOCIETIES APPOINTED FOR THE ENSUING WEEK.

Westminster . . .	Sat. Nov. 6, 8 P.M.
Medical . . .	Mon. " 8, 8 "
Medical & Chirurgical Tues. . .	" 9, 8½ "
London Hosp. Med. . .	Thurs. " 11, 8 "
South London . . .	" " " 8 "

Reviews.

On the Inhalation of the Vapour of Ether in Surgical Operations: containing a Description of the various Stages of Etherization, and a Statement of the Result of nearly Eighty Operations in which Ether has been employed in St. George's and University College Hospitals. By JOHN SNOW, M.D. &c. 8vo. pp. 88. London: Churchill. 1847.

Dr. SNOW divides the effects of ether into five stages or degrees: premising, however, that the division is, in some measure, arbitrary,—that these different degrees run gradually into each other, and are not always clearly to be distinguished. In the *first degree* of etherization he includes the various changes that a person may experience, while he still retains a correct consciousness of where he is, and what is occurring around him, and a capacity to direct his voluntary movements. In what he terms the *second degree*, mental functions may be exercised, and voluntary actions performed, but in a disordered manner. In the *third degree*, there is no evidence of any mental function being exercised, and consequently no voluntary motions occur; but muscular contraction, in addition to those concerned in respiration, may sometimes take place as the effect of the ether, or of external impressions. In the *fifth degree* (not witnessed in the human being), the respiratory movements are more or less paralysed, and become difficult, feeble, or irregular.

"If a middle-aged man, of about the average size, is supplied with air mixed with the vapour of ether, in the proportion of 45 per cent. vapour to 55 per cent. air, and breathes it easily and without obstruction, he usually consumes about two drachms of ether per minute. It is not all absorbed, for a part is expired after passing no further than the trachea. At the end of the first minute he is usually in the first degree of etherization; of the second minute, in the second degree; of the third minute, in the third degree; and, at the end of four minutes, having inhaled an ounce of ether, in the fourth degree. If the inhalation is now discontinued, he commonly remains in this degree of etherization for one or two minutes, passes gradually back into the

third degree, which lasts about five minutes, to give place to a feeling of intoxication and exhilaration, which lasts for ten or fifteen minutes longer before it entirely subsides."

Dr. SNOW considers that it is not practicable to perform operations, in the absence of pain, without carrying the effects of ether further than the first degree. He remarks, also, with regard to the second degree, that, according to what he has seen, a surgical operation would cause pain, if etherization were not carried further than this degree also, although, if the pain should not arouse the patient, and bring him back to the first degree, he would probably not remember it. This last particular has always appeared to us to afford one of the most important considerations upon which the decision of the propriety of employing etherization in surgical operations rests. We believe that, in no inconsiderable proportion of operations, great physical anguish has been endured by the patients, while under the partial influence of the medicinal agent, although all recollection of that suffering has passed away so soon as the system has recovered from the impression of the drug. The author adds, that it appears that surgical operations have often been performed in this stage, and several eminent surgeons were at one time opposed to the use of ether, on account of the struggling which they supposed to be inseparable in most cases from operations performed under its effects. When, however, the patient has been more deeply etherized, Dr. SNOW considers that he is often totally insensible to a surgical operation, as the effect of the ether is going off, whilst he is under its influence only to the second degree. Whether this is, or is not, in reality the case, it may be almost impossible for human observation to decide; but we have certainly observed the evidences of severe physical suffering in patients in whom the effects of the inhalation had been apparently carried as far as the state of the brain and circulation would admit: though, upon recovery, all recollection of the operation has been strenuously denied.

Dr. SNOW shows that, even in the third degree, it is probable that sensation is by no means extinct. In the fourth, the patient always remains per-

fectly passive under every kind of operation; and as the muscles are completely relaxed, this is the proper stage for the reduction of dislocations. The patient never begins to snore until he has reached the fourth degree, or is passing into it from the third, and from all that the author has observed, he believes that when the patient snores from the effects of ether, he is always totally insensible to every thing which is done to him. We have little doubt of this; but the indication of coma is assuredly no trifle. Indeed, a little further on, the author tells us that, "if there is the least snoring he always leaves off the vapour entirely, even without waiting for the commencement of the operation, when he has requested that it may be begun." "It is not possible," he adds, "to avoid having the breathing somewhat stertorous; for, in some patients, no sooner does this kind of breathing subside, than the symptoms of pain from the operation begin to appear; and no sooner are these symptoms removed again by the ether than the stertorous breathing reappears." Upon the whole, then, it appears that it is only when the brain has begun to suffer from a most perilous degree of oppression, when the limbs are paralysed, and the muscles of the pharynx and fauces begin to falter in their action, that there is just reason to believe that the perception of pain is fully extinct; and, further, that, so soon as this condition has been completely established, it becomes necessary to discontinue the inhalation, and to permit the effects of the drug to pass gradually away, even although the first step of the operation shall not have been commenced. It is true that Dr. Snow considers the patient to be generally insensible to pain as the effect of the ether is going off, whilst he is under its influence only to the second degree, but who shall say through what vicissitudes of varied, and perhaps, fearfully exalted, though afterwards unremembered suffering, the apparently passive wretch is exposed while his stupified faculties are gradually becoming roused from the state of absolute insensibility? Dr. Snow goes on to remark, that the fourth degree of etherization seldom continues more than two or three minutes after the process of inhalation

is left off, and he has never kept the patient in this stage more than five or ten minutes; but, in operations of long duration, has allowed the effects of the vapour to diminish somewhat from time to time. The integrity of the functions of respiration and circulation is not, he conceives, impaired in this degree. Dr. Snow is not aware that any state of the patient, with respect to age, constitution, or disease, positively contra-indicates the use of ether during a surgical operation. The patients to whom he has given it have been of all ages, from early childhood to nearly eighty years, six of them being upwards of seventy. They have been in the most different states of general health: two or three had symptoms of tubercles in the lungs; one had extensive disease of the heart; two or three had been subject to attacks of congestion of the head; and yet there have been no ill consequences from the ether in any case, and not even any unpleasant effects to counter-balance its advantages, except sickness and vomiting in a few instances. Dr. Snow's experience of this agent has certainly been calculated to suggest to his mind an idea of its innoxious operation: still the evidence of six cases in which it was employed in advanced age, of one example in which it was borne by a patient the subject of heart disease, and of two or three who had suffered from cerebral congestion, is, to our mind, in no degree sufficient to overthrow the opinion to which we have always adhered, since the application of ether was first introduced, that in all persons the power of whose nervous and circulatory systems is distinctly impaired by age, in the subjects of manifest organic disease of the heart or aorta, and in individuals who have an evident tendency to apoplexy, the use of etherization is absolutely unjustifiable on the part of the surgeon, and eminently fraught with danger to the impaired organs and shattered constitution of the patient.

Children are considered by Dr. Snow to be amongst the most favourable subjects for ether, recovering from its effects as promptly as they are brought under its influence, and it possesses more than the usual advantages in their cases, as without it their struggles would often interfere

with the performance of an operation. We doubt whether further observation would not lead to considerable qualification of the above opinion: would any surgeon be willing to employ the ether in a child which he knew to be the subject of latent tubercular disease of the brain, or to be liable to attacks of acute hydrocephalus, or of any other form of meningeal lesion? Still, these are tendencies which even the most practised observers often fail to detect until they become developed in the first manifest symptoms of active disease. In all the cases he has witnessed, the patients have recovered their mental faculties very promptly after the conclusion of the operation, generally within a few minutes; and in two or three cases only has the period of recovery been delayed for half an hour. He does not think that anything is ever required to promote the return to sensibility. When the patient is sufficiently etherized to feel nothing of a surgical operation, he is far beyond the reach of stimulation by ammonia, cold affusion, or anything else; and when he is so far recovered that these things would make an impression, there is not long to wait for his complete recovery. Elderly people are slower in recovering than young ones, as their respiration is less active, and the ether takes a longer time to evaporate in the breath. For the same reason, if sickness has been caused by the ether, the patient is longer in recovering, as it depresses the respiratory movements.

The author has observed that the blood shed during these operations always coagulates on the floor of the operating-theatre. There has not been any considerable secondary hæmorrhage, except in one case, after an amputation, and therefore he is not disposed to look upon ether as causing any increased liability to this accident; nor, indeed, does he believe that there is anything to prevent every vessel, large enough to require a ligature, being tied at the time of the operation; for there is a good pulse—a better pulse, indeed, generally, than there would be if the operation were performed without the ether. This may be generally the case; and yet, in a young and apparently healthy man, we have known the pulse falter and intermit so much, as the inhalation

continued, that those who held their fingers to his wrists began to fear that the heart was immediately about to cease to act.

We have not entered into a description of Dr. Snow's ingenious apparatus for the inhalation of ether, which is fully described in this volume, because we doubt not that most of our readers are acquainted with its principle and construction. We believe that those surgeons who have carefully tested the respective apparatuses that have been invented for this purpose, consider that the instrument recommended by Dr. Snow is equal in efficiency, if not superior, to any of the others. The use of the sponge, however, appears to have entirely superseded the employment of more elaborate contrivances.

Proceedings of Societies.

WESTMINSTER MEDICAL SOCIETY.

Saturday, Oct. 23, 1847.

Dr. WEBSTER, President.

Extirpation of both Ovaries.

Dr. FREDERICK BIRD related the case of a lady, aged thirty-two, from whom he had lately extirpated both ovaries. The preparations were exhibited, one of which was of nearly spherical form, of compound character, and had weighed about twenty pounds; the other was of remarkably irregular form, consisting of several lobules or distinct cysts, attached to a common base; these several cysts had been filled by different secretions, the larger of them having contained much cholesterine; the weight of this second tumor equalled four pounds. Both tumors were adherent to the abdominal walls, the larger one having been, in its upper portion, covered by the firmly adherent omentum, one of the arteries of which was greatly enlarged, and was ligatured. The patient experienced no untoward symptom, and rapidly recovered, menstruation having since recurred. The author directed the attention of the members chiefly to three features of the case: the probable cause of the disease, which was, in the case of the left ovary at least, to be distinctly traced to antecedent inflammation of that organ, whilst each subsequent change in the character of the disease seemed also to depend upon the accession of inflammatory states. He next spoke of the diagnosis, which in this case was at one period so diffi-

cult as to have induced him to defer the operation to the latest period, in the belief that the supervention of additional symptoms might render the propriety of performing it more certain. The chief difficulty arose from the loss of evidence commonly afforded by vaginal exploration, the uterus having been drawn up so far out of the pelvic cavity that it was impossible to make any satisfactory examination. The fact of menstruation having been uninterrupted by the previous destruction of the ovaries by disease, or by their subsequent extirpation, was interesting; and it was observed that, as in the present, so in the majority of such cases, there existed a marked tendency to menorrhagia. He regarded the case as useful, in serving to extend the limits within which the extirpation of ovarian tumors might be successfully employed, and not less so as illustrative of the period at which the operation could alone be sanctioned, when the general health of the patient was beginning to sink beneath the exhausting influence of the disease.

Mr. HIRD made some remarks in reference to the difficulty of diagnosis attending ovarian tumors, and alluded to one recently falling under his own observation, in which pregnancy had been mistaken for tumor. He believed that in most cases the diagnosis was very difficult, and in many was almost impossible, and, from the errors of diagnosis that had from time to time been committed by practitioners of eminence, it was probable that such mistakes would again occur. He regretted that the absence of statistical data prevented any accurate idea being drawn with regard to the prognosis,—a difficulty that was increased, in reference to the operation for extirpation, by the fact of several unsuccessful cases not having been recorded. He doubted whether the operation was justified by the general result of cases of ovarian disease, as some patients lived for a long time with the disease, and, in some, considerable intervals occurred between the periods at which tapping was required. He alluded to the very large doses of opium exhibited in this case, and asked why so much was required to produce the effect desired.

Dr. MURPHY could not agree in the remarks that had been made by Mr. HIRD. It was true that certain cases had occurred, and were sometimes met with, in which the progress of ovarian disease is slow, and in which the patients may live on for a considerable period of time, but these did not constitute the general rule. Ovarian disease was seldom stationary: fluid, once present, would be again secreted; and although the intervals between the periods of tapping often varied, yet, sooner or later, the fluid returned, and the former symptoms re-

curred. He alluded to the case of a lady whom he had attended with Dr. F. Bird, in whose case the sac was punctured more than a year ago, but in whom the fluid had not yet re-accumulated; that it would do so, however, he believed was quite certain. He also differed from Mr. HIRD in the remarks he had made concerning the erroneous diagnosis that had been formed in certain cases, and of the failure of the subsequently attempted operations in consequence of such error; but the fault was with the operator, not with the operation; and he thought it most undesirable that the operation should be attempted by those who were not fully qualified for its performance, or who had not, by long previous study, and accurate acquaintance with ovarian disease, become enabled to contend successfully with the dangers and difficulties attending its treatment by extirpation.

Mr. HANCOCK expressed his admiration of the successful issue of the operation performed by Dr. Bird, and believed that the case related was unique. With others, he regretted that the results of all the cases that had occurred had not been fully recorded, for at present it was impossible to employ the statistical tables that had been formed, as, from the fact of unsuccessful cases having been omitted, they became useless as data from which a correct opinion might be drawn. The presence of disease in both ovaries, in the case related, suggested an important inquiry as to the relative frequency of disease, in an incipient form, in the remaining ovary, when the opposite one was the seat of large tumor. He had frequently observed, in the dissection of the dead, that cysts had been present in both ovaria.

Dr. SNOW inquired whether the influence of ether had been employed in Dr. Bird's case. The length of time during which insensibility might be required would form no objection to its use; and as narcotism appeared to form a part of the subsequent treatment, he believed that etherization might prove doubly serviceable. In a case in which it was required to apply a paste of caustic to the face, he had kept up insensibility by ether for two hours and a half, without any bad effect whatever.

Mr. STREETER spoke in high terms of the operation, and did so more especially, as in a former year he had been opposed to its employment. Having, however, now witnessed the success of Dr. Bird's last operation, which had been surrounded by so many difficulties, and having, moreover, been an observer of the powerful prophylactic influence of the after-treatment pursued, he found the operation to be freed from much of the attendant danger which otherwise attached to it; and in a case

under his own care he had not only sanctioned but advised the operation.

Dr. FREDERICK BIRD did not think it necessary to reply very fully to the remarks made by Mr. Hird, as it would be useless, as well as unjust, to employ as arguments for or against the operation the assumptions he had taken. If an attempted operation failed and was abandoned, the error was with the diagnosis rather than with the operation. He could not at all concur in the opinion, that patients with ovarian disease lived long—rare instances had been recorded, and occasionally occurred, in which life was protracted beyond the average duration in ovarian disease. But without relying upon statistical returns, into which he believed much error had crept, he had obtained from practitioners of long and extended experience, and who were really acquainted with the subject, an almost unvarying statement of the comparatively rapid course of ovarian disease, as well as of the inutility of the ordinary means of medical treatment. In reply to his question relative to the quantity of opium given, he could scarcely think it necessary to remind Mr. Hird that its exhibition was not to be regulated by any prescribed dose, but by the effect produced, and the effect required. The simultaneous occurrence of disease in both ovaries was rare; such cases, he believed, formed not more than three or four per cent. of the whole. He had never met with a case similar to that which he had related, and the only case on record which offered any correspondence with it was that occurring to Dr. Atlee, of Pennsylvania, in which the ovaria, enlarged to the size of a goose-egg, were successfully removed.

Some further discussion ensued, in which Dr. Murphy, Dr. Lankester, Mr. Clarke, and others, joined.

SOUTH LONDON MEDICAL SOCIETY.

October 21, 1847.

Dr. HUGHES, PRESIDENT, IN THE CHAIR.

THIS being the first night of the session, some introductory remarks were made by the President.

Mr. WATERWORTH then read a paper on

Neuralgic Tetanus.

The author stated, that by the term neuralgic tetanus he meant to designate a class of diseases interesting by their frequent occurrence and obscure pathology; as bearing upon the question of reflex action, and particularly by their involving the comfort,

and even the life of the sufferer; originating usually, though not always, in the form of neuralgia or rheumatism of the lower extremities, but, after a more or less protracted period, terminating in paraplegia: a knowledge of their real pathological character appeared essential for their cure, whether they originated in some lesion of the cerebro-spinal system, or, according to the examples brought forward by Dr. Graves, in an impression made upon the sentient nerves of the extremity carried to the spine, and thence, by reflex action, distributed to distant parts; or, as others supposed, in a morbid condition of the humoral system. The two cases narrated were peculiar in the severe and frequent clonic spasms, extending over so lengthened a period, and yet in many points they resembled tetanus or hysteria, although distinguished from the latter by the pain, consciousness, and quietude of the heart's action.

C. K., æt. 30, spare and of small make, consulted the author in 1828 for a severe neuralgic intermittent pain occurring daily two-thirds down the thigh; it appeared to arise from exposure to cold, although it was also attributed to a blow on the foot some time previous. The treatment consisted in purgatives, generous diet, exhibition of steel and quinine, and local blistering; it, however, continued, although at times alleviated, for three years, when imperfect paraplegia, with severe spasms of the muscles, ensued. The paralysis was only such as to impede quick walking; progression was, as it were, by impulse; no dragging of the foot was present. The pain had by this time extended to the sacral and pelvic regions; his health, with the exception of occasional constipation, remained good, and his pulse was as slow as usual. His nights becoming restless on account of pain, opium was added to the former treatment, with local depletion, counter-irritation, and a very generous form of diet: these means for a time produced much benefit. Afterwards the sphincters became occasionally influenced, and there was also partial loss of sensation, as to touch, upon resting the foot on the ground; the speech was slightly affected, the articulation deliberate, and the spasms extended over the body. The pulse, temperature, and respiration, continued normal. In 1844, all medicines, except opium, were omitted, travelling and complete absence from business being recommended. In 1846 there was extension of all the symptoms, the spasms putting on the character of tetanus; the severe pain commenced in the ischia, extended down the lower extremities and over the abdomen, up the back, also over the chest, causing

præcordial distress, down the arms, and up the back of the neck; the knees were drawn up to the abdomen, the hands firmly bent on the chest, while the elbows closely embraced the sides; the toes would then become suddenly extended, and opisthotonos succeed; in the transition the patient became violently raised almost out of bed; great intolerance of air, sound, or touch, was present. On the cessation of the attack, the fingers and toes continued in action, the tongue also constantly moving; excessive prostration ensued, but the intellect was clear, and he was conscious during the paroxysms: there was perfect use of the legs when in bed. This uncertain state still continues, and for the last three months each attack, from its severity, has been supposed by those present as likely to prove a fatal one. The patient has been for some time narcotised by opium as the only means of influencing the spasms; deglutition becoming impaired, considerable emaciation has taken place.

The second case occurred in a sporting man, aged 45, who was attacked with rheumatism of the lower extremities, and occasional violent spasms of the lower half of the body, and sometimes of the arms and fingers: there was no trace of inflammation of the skin, nor did the spine present any lesion. The pain and spasms, now extending over the abdomen, became very severe, lasting eight or ten hours; pulse was never influenced; at times there was perfect remission for a whole month. Opium only appeared to mitigate the pain; even when free from the paroxysm, he has been compelled to take two drachms, often one ounce, of tincture of opium in the twenty-four hours, with upwards of a pint of brandy. After a few years paraplegia came on; it became necessary to employ catheterism and injections per anum daily. The disease extended over a period of twenty years, and the patient at last died of influenza. No post-mortem examination was allowed.

The author concluded by stating that his object in bringing these cases before the Society was to gain, if possible, a better knowledge of their pathology and proper treatment, as such cases were too apt to be treated empirically; and also he wished to ascertain whether the symptoms arose from inflammation in some part of the nervous system, and, if so, whether, by being treated as such, a more successful termination might be expected.

Dr. MURPHY did not think that inflammation of the substance of the cord itself, or its fibrous sheath, could cause these symptoms: its fibrous sheath was at too great a distance from the cord to affect it; and if the substance of the cord itself was affected, he would inquire why were motor nerves only

attacked: if the affection was inflammatory it would yield to antiphlogistic treatment, and would not be of so protracted a character. In those rapidly fatal diseases, tetanus and hydrophobia, nothing remarkable is found in the spinal cavity. If the above symptoms had occurred in females, they would probably be considered of the hysterical character, and he had himself met with cases of tonic spasms almost as severe as those related, commencing at an early age in the female, and continuing until the function of menstruation terminated. Recovery then took place. He could not regard such symptoms as attributable to inflammation, nor would he expect, after the disease had ceased for years, any pathological appearance. Hysteria he considered as probably nothing more than ovaritis, and if an organ so far removed from the spinal cord could produce such symptoms, why might not some other possess an equal power? In real diseases of the spinal cord he did not think that pressure on the spinal column would cause pain, the cord and its appendages being so well protected by its bony case; the only diseases where tenderness may guide us are caries and inflammation of the column itself. In the cases of neuralgia of the mamma, or eighth intercostal nerve, pain will not be observed by pressure on the spine, but at the side of it, just where the nerves emerge from the bone, and he would venture to ask, might not the pain be owing to some temporary impediment to the venous circulation through Breschet's veins: the same might be said of clonus hysterics, &c. Epilepsy itself was an intermittent complaint, and many suffered from it whenever the circulation was embarrassed, and were not able to lie on the left side without an attack: whatever, then, is the real seat of the disease, there yet remains to be discovered the occasional exciting cause.

Mr. HILTON did not altogether agree with Dr. Murphy in his views, or coincide in the belief that no trace of disease could be discovered after death. From an experience derived from the examination of many cases of tetanus after death, he was of opinion that, in most instances, some evidences of disease were found, especially in the medulla oblongata. He had often observed, also, in the spinal cords of persons advanced in life, the occurrence of small bony plates, or scales, most especially where lumbago, &c. had been complained of. He thought these pains should be viewed as pains of a certain nerve, and should be traced along the course of that nerve. This plan would be found of great practical importance. The cases related by Mr. Waterworth, although occasionally occurring, were rare; and, from the pains, &c.

at first, he should consider there had existed inflammation of a part of the spinal column, extending upwards to the medulla oblongata. If inflammatory, their periodic character was difficult of explanation, but in some cases the existence of *marah miasmata* might be taken into consideration.

Mr. CRISP did not agree with Mr. Hilton, that the laminæ of bone to which he had alluded could produce much, if any, disturbance of the nervous system, having observed such plates where no symptoms had existed during life. He had found in one female in particular the spinal sheath completely cased with bone, and yet she had never suffered during life from neuralgic pains.

Mr. HILTON explained. He did not consider the local pains alluded to were caused by the bony plates, but he had merely mentioned it as a fact, that, in individuals who had suffered most severely from pains of back and loins, these bony scales were found most numerous.

Dr. LONG, observing how closely Mr. Waterworth's cases resembled tetanus, considered that they could not be viewed in any other light. He did not, however, think that evidences of disease were in all cases discoverable after death. He related the case of a child lately seen by him, who, in consequence of a fall, received an injury of the back, followed by great pain. Death took place after several days' suffering, and the greatest agony from tetanic spasms. On dissection, no trace of disease could be discovered.

Mr. RAY considered that these cases much resembled those related by Dr. Marshall Hall, in which inflammation of the spinal cord was ushered in by twitches of the muscles of one or both lower extremities, and gradually increased until perfect paraplegia ensued. Here the similarity of the cases ended, Mr. Waterworth's assuming the characters of tetanus.

The PRESIDENT observed, in confirmation of what had been stated by Mr. Hilton, that he had lately been informed by a talented physician that he had never seen a well-marked case of chronic *tic douloureux*, without at the same time discovering, after death, some very obvious cause.

Thanks having been presented to the author of the paper, the Society adjourned.

At the next meeting, November 11th, Mr. Remington will read "A Case of Protracted and Difficult Parturition, in connection with Deformity of Pelvis and Rigidity of the Os Uteri."

Medical Intelligence.

THE PRESENT STATE OF MEDICAL OFFICERS OF POOR-LAW UNIONS.

THE readers of Walter Scott will remember well the description of the occupations of a country practitioner in the "Surgeon's Daughter." Matters are not altered in this respect since Dr. Grey's time. The same extended range of country as his scene of operations—the same number of sick clients whom to relieve is impossible, and to abandon to their fate a daily trial—the same slender means, and incessant calls upon his inadequate resources—all down to the very pharmaceutical horse which eats up the year's profits to his own private cheek, remains unaltered. Consider for a moment what is the condition of that much-enduring man, a general practitioner in the country. He begins his career by a long and expensive education in the laboratory, the hospital, and the dissecting-room: he masters many branches of physical science, and acquires, at the least, an average share of the general education common to the upper classes in England, and, after years of expectation and struggle, finds himself planted in some rural district in England. If he be fortunate, and avoids the ambitious temptation of becoming medical functionary to a union workhouse, he may, by rising early and going to bed late, train up a race of little Galens amongst his phials and gally-pots—the heirs of his charity, his learning, and his merits. His life is one of incessant toil. He is condemned to pass every waking moment—and it is on rare occasions he can close his eyes—amidst such scenes of physical agony as unprofessional nerves shudder even to think on. If he sees a child, instead of the solace of the joyous laugh and merry face men love to hear and see, he meets with nothing but the scarlatina and the hooping-cough. His middle-aged friends and acquaintances are hectic with the consumptive flush, or burning with the ague fit; whilst the grey-haired man comes before him only in that last stage of human degradation so finely described by the Roman satirist, of which physical suffering is the least revolting part. Every enjoyment and relation of human life is thus warped from its proper end. Let us examine a little from the report of the convention of the Poor-law medical officers what kind of remuneration society bestows upon its most pains-taking benefactors. We take the first example given from the speech of Mr. Daniell. This gentleman premises by stating a fact which we believe to be perfectly true, that in the majority of the

Poor-law unions throughout the kingdom the salaries of the medical officers would not pay for the value of the medicine administered, if charged at the prices received by an ordinary druggist.

Be this as it may, in Newport Pagnell Union, the population of the parish of Astwood, which is three miles from the medical attendant, is 242, and the doctor receives £2 per annum; Bradwell, population 374, salary £2 10s.; Brayfield, population 83, salary 10s.; and so on. The payment from the parish books is 2s. 6d. per head for adult paupers, and 6d. for a child. In Mr. Daniell's union he had dispensed so much medicine to the poor that, taking it at the ordinary rate charged by druggists, and asking nothing for labour, journeys, and medical skill, he was £24 *minus* at the end of the year. In the Holborn Union, the guardians, it would seem, would not pay the medical officers for midwifery cases. Mr. White, the senior medical officer to that union, had to attend this year 2,027 cases, and his salary amounted to as nearly as possible 8jd. per case. In the Basford Union there was one case; an area of 9,000 acres; population 4,429; patients in the year, 416; actual expenditure £45; salary £30. Other instances quoted were similar in character to these.

These facts are probably the strongest arguments to be adduced in favour of a change. There is a vast difference between the medical labour-market and the labour-market in any other sense. It may be a difference of degree rather than of kind, but the line of demarcation is not the less strongly marked. We perfectly believe it may be possible to go to Guy's, Bartholomew's, or St. George's, and find plenty of enterprising young men who would undertake the healing missions of a poor-law union at a remuneration one-half lower than the stipend actually given. In a humane sense, however, such a proceeding would be a want of feeling; in a fiscal point of view, mistaken economy. Through defective skill, or the necessity of eking out a livelihood in some way or other, the medical officer would allow his patients to languish for months, where weeks would have sufficed for the cure. We take, of course, the ordinary run of men, and the common springs of human action. It is not to be expected of human nature that men should be met with at every turn who are ready at any moment to sacrifice distinction, fortune, and health in the cause of suffering humanity. Medical men enter their profession to live by it, as other men do. Mr. Parker stated at the meeting, that he had reminded the guardians that, "if he chose, he could withhold medicines—he could protract fever for several weeks, and, by not securing the patient's early return to

health, lay the ground for long-standing disease—they had no control over his 'judgment.' We may add—nor over the defective treatment of an inefficient man.

Thus, then, the case stands. Is it a judicious practice to put these offices up to public competition, and take the lowest bidder apart from other considerations? Is it right to make the lowest bid even an element in the calculation?—It appears to us not. Setting aside all considerations of the sufferings inflicted upon the lower classes through the administration of improper remedies and unskilful attendance, this is not politic even as a question of pounds, shillings, and pence. We are inclined to think that a small fixed salary, in proportion to the extent and importance of the union, (not, as at present, where the salary is merely a name,) with a proper allowance for the cases, taking one with the other, and an average for drugs, is not a bad scheme of administration. We are not at all inclined, with all our respect for general practitioners, to give them the opportunity of debiting the guardians with two dozen of bottles of febrifuge per patient per day. The only point is, to let the salary and allowances be commensurate with the service performed. It cannot be very difficult to make a calculation upon the area of the union, and the average cost of the attendance on each case.

Medical practitioners who are engaged as professional advisers to a union, as a general rule, we find, are rather injured than benefited in their practice. It must be so. A poor-law union of the common size, with the poor-house and the out-patients, is quite sufficient occupation for one man's time. It is quite in vain to suppose that the addition to a man's private practice will make up for the positive loss on his public engagement. More than this, there should be a discretionary power lodged somewhere—whether with an inspector or not, we cannot say—to pass such extraordinary charges as are incurred in peculiar cases. Instances have been mentioned in which the practitioner could have saved the life of a patient by the employment of a costly remedy. But who was to pay him?—it is not to be supposed that he himself would remain out of pocket. For want of such an authority many a sick or convalescent patient is suffered to languish or relapse. Altogether the condition of the medical officers of unions is one which must shortly receive close investigation, not only in their own interest, but in that of the poor. We must see what the Parliamentary Commissioners will have to propose.—*Times*.

THE CHOLERA IN RUSSIA.

THE following letter from St. Petersburg, dated Oct. 17, contains the latest intelli-

gence respecting the progress of the Asiatic cholera. It is now committing its ravages in the Russian empire in the same parallel of latitude as London:—

"The cholera makes fresh progress in Russia, in a westerly and northerly direction. It has just broken out in the Governments of Simbirsk, Kazan, Nijni-Novogorod, Riasan, Poltowa, and Tambo. Thus far, it does not appear disposed to spread on the side of Podolia and Galicia, and it has very little intensity in this quarter. In that direction it has only shewn itself on one point, at Ikaterinofslaf, where it traversed the Dnieper. Without counting Georgia, the Caucasus, and the country of the Cossacks of the Black Sea, it already reigns in sixteen Governments of the Russian empire. On the 30th September it broke out at Moscow."

A letter of the 23d from Kiel, in the duchy of Holstein, says—"In the village of Warnau, near to the town of Preetz, a peasant named Hingst, aged 30 years, was attacked the day before yesterday with Asiatic cholera, and died after thirty hours' suffering. The medical man who attended the deceased, Doctor Sanknecht, of Preetz, has published details of the progress of the malady of Hingst, in the weekly journal of that town, and in the *Kiel Correspondent*. This is the only case of cholera which up to the present time, as far as we know, has yet been observed in our country."

We are not inclined to put any faith in this report of the sudden appearance of the disease in the duchy of Holstein. It is most likely that the solitary case said to have occurred at Warnau is like some of the cases which were reported to have occurred in London in the summer of 1846, i. e. autumnal diarrhoea in a very aggravated form, and to which the terms "Asiatic cholera" were improperly applied.

CLIMATE OF THE WEST OF ENGLAND.

THE climate of Cornwall and Devonshire, as shewn by the last quarterly return of the Registrar-General, is not only different from every other part of England, but is far from being the same in different parts of these counties. The average daily range of temperature, and extreme monthly range, are smaller than elsewhere, but different at the different stations. The average daily range of temperature for the two counties is 12°9; at Falmouth it is 9°5 only, which is 3°4 less than the mean for the two counties, or, in other words, is one fourth part less; at Exeter the average daily range is 17°2, which is nearly the double of that at Falmouth. The mean temperature at Falmouth was no less than 3°8 less than that at Torquay: the average quarterly range of the reading of the thermometer shewing the temperature of the air for the two counties was 35°5;

but that at Helston was 9°3 larger, and that at Falmouth was 7°5 smaller than the average. The highest reading in the quarter was at Helston, and the lowest was at Exeter, and these two extreme readings differed very much from the extreme readings at the other places. In fact, there seems to be several different climates in these counties, but all of them free from extreme and sudden changes of temperature.—*Registrar-General's Report*.

DEFECTIVE CORONERS' INQUESTS.

THE following letter, upon a subject of some interest to the profession, has been addressed to the *Times*:—

"SIR,—A few evenings since a stranger was brought to my surgery, and after more than two hours of extreme suffering died there.

"From the friends of the deceased person I ascertained that she had not ever been known to be similarly attacked, and of the actual cause of death I am alone cognisant, or can be.

"An inquest was last evening held on the body at the Zetland Arms, Old Brompton, and I understand a verdict was decided upon, that 'the deceased had died from natural causes.' I was not summoned to the inquest, nor was any medical evidence obtained, and upon the mere gossip-information of the friends of the deceased (who were utterly ignorant of the nature of the cause of death) the above verdict was most sagely passed.

"I am not aware that upon any mere hearsay or opinionative statements, entirely irrelevant to the *bona fide* case in hand, any coroner, or coroner's deputy, is by law justified in permitting such a farce of an inquest as was last evening performed, to be palmed upon the public as a judicial investigation into, and satisfactory solution of, a death so sudden and distressing as that of the deceased individual to whose melancholy end I am now referring.

"Sir, if you will give this note insertion in your columns, it may elicit some explanation accounting for the singular conduct of the gentleman presiding as coroner. For my own part, a *post-mortem* examination only would satisfy me as to the substantive mischief existing in the body of the deceased, and consequently as to the nature of the verdict which should have been returned.

"I am, sir, obediently yours,

"THOMAS EMBLING.

"Brompton Row, Oct. 29."

. This letter exposes a very common grievance. We hardly know whether Mr. Embling has any great reason to complain, since coroners are now in the frequent habit of adopting two modes of dealing with medical men. Some of these functionaries, in order to save the guineas and

TABLE OF DEATHS IN LONDON DURING THE LAST QUARTER. 821

make their quarterly returns look respectably low before the county magistrates, never call in medical practitioners as witnesses. Others are in the habit of calling them, making use of their opinions, and then adopting some mean subterfuge for evading the payment of a fee. The former practice, so far as the profession is concerned, has assuredly the advantage of the latter. It is also marked by a greater degree of conscientiousness. But there is a universal mistake respecting coroners' inquests in England. A somewhat absurd opinion is afloat, that the object of the inquiry is in all cases to determine the *cause* of death: but this is a delusion. The

Reports of the Registrar-General inform us that in *sixty-six* per cent. of all cases, no cause is assigned in the verdicts; and our own pages have frequently borne witness to the fact, that a wrong cause is often returned, the coroner and jury relying upon an *outside* view of the body, according to the statute of Edward 1. *super visum corporis*! The real and legitimate object of the coroner's inquest in the present day is to chronicle the death without being very particular about the cause; and to provide a handsome annual salary for the gentleman who is fortunate enough to occupy the office!

A TABLE OF THE DEATHS IN LONDON FROM ALL CAUSES, REGISTERED IN THE QUARTERS ENDING SEPTEMBER 1846-47.

Metropolis.	Population.	Deaths registered in the Quarter ending September 30th.			
		1844	1845	1846	1847
West Districts	301,326	1,822	1,559	1,815	1,936
North Districts	376,396	2,342	1,872	2,452	2,543
Central Districts	374,759	2,190	2,075	2,201	2,452
East Districts	393,247	2,547	2,637	2,859	2,948
South Districts	502,483	3,073	2,844	3,274	3,306
Total	1,948,211	11,976	10,987	12,601	13,187

Causes of Death.	Quarters ending Sept.	
	1846.	1847.
ALL CAUSES	12409	13187
SPECIFIED CAUSES	12364	13158
Small-Pox	51	320
Measles	78	521
Scarlatina	298	316
Hooping Cough	355	238
Croup	66	62
Thrush	113	82
Diarrhoea	1549	1196
Dysentery	75	143
Cholera	197	98
Typhus	403	895
Sudden Deaths	63	126
Hydrocephalus	448	415
Apoplexy	273	276
Convulsions	513	521
Bronchitis	271	330
Pleurisy	30	35
Pneumonia	399	409
Asthma	95	96
Phthisis or Consumption	1784	1581
Disease of Lungs, &c.	111	123
Pericarditis	20	20
Aneurism	10	18
Disease of Heart, &c.	321	331
Teething	138	163
Childbirth	80	91
Violent Deaths	403	425

A NEW DE-ODORIZING OR ANTIBLOMIC PROCESS.

YESTERDAY morning some experiments were made in a piece of ground at Grove Lane, Hackney, to test the efficacy of "Ellerman's Patent Disinfecting Process." Several members of the Hackney board of guardians, and the medical men connected with the union, were present. A tub of offensive night-soil was procured, into which a small quantity of the patent liquid was poured and stirred. A rapid and complete change in the chemical constitution of the filth immediately took place, and it was the general opinion of the gentlemen present that the faecal smell had disappeared, the only perceptible odour being that of the reagent itself, which leaves a faintly sourish smell. It appears that the liquid converts into salts the volatile and offensive gases in putrescent matter, and thus increases its value as manure. A scientific gentleman present tested the operation of the fluid by the application of the phosphuret of calcium and the bisulphuret of carbon, to the mixture thus operated upon, and the results were held to establish the completeness of de-odorization which had been effected by the fluid. Of the value of the invention as

a disinfectant, the experiments of yesterday do not enable us to judge, since it by no means follows that a process is necessarily disinfecting which succeeds in neutralizing the fetid exhalations from decomposed animal and vegetable matter. A de-odorizing fluid may be usefully employed as an adjunct to sanitary measures, but cannot be safely substituted for them. It may be hoped that no public body will be induced to tolerate the existence of cesspools and other nuisances in crowded districts, because the admixture of a few pints of a cheap re-agent may remove the offensive odour. The only thing to be done with decomposing animal and vegetable matter in large towns is promptly to remove it, and we should regard the introduction of these "disinfectants" with considerable jealousy if we could suppose that public officers were likely to pervert them from their proper use; *i. e.* of simply rendering the filth inodorous.—*Times*.

THE IRISH BOARD OF HEALTH.

THE attempt on the part of the friends of the Board of Health, to confer on Dr. Corrigan the honorary Fellowship of the Irish College of Physicians, has ended in signal failure. We are informed that the Government candidate, who, it appears, was proposed contrary to all the rules and practices of the College, was rejected. We must regard this as a very strong indication of professional feeling, not only against the Government measure, but against those professional men who have given it their support.

OBITUARY.

ON the 19th ult., of typhus fever, in the county of Tipperary, Valentine Flood, M.D., formerly of Blessington Street, Dublin.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	29.62
" " Thermometer	53.5
Self-registering do. max. 74° min. 31°	
" " in the Thames water — 54.5 — 52.5	

From 12 observations daily. Sun.

RAIN, in inches, 1.04: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 4.6° above the monthly average. The week was chiefly remarkable for the large quantity of rain which fell.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Oct. 23.

BIRTHS.	DEATHS.	Av. of 5 Awt.
Males.... 630	Males.... 481	Males.... 528
Females.. 607	Females.. 486	Females.. 518
1237	967	1046

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—Registrars' Districts, 129.
Population, in 1841, 1,915,104.)

West—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	151
NORTH—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 366,303)	170
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	171
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 393,247)	215
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich .. (Pop. 479,469)	260
Total	967

CAUSES OF DEATH.

ALL CAUSES	Av. of 5 Awt.
SPECIFIED CAUSES	967 1046
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	296 311
<i>Sporadic Diseases, viz.—</i>	
2. Dropsy, Cancer, &c. of uncertain seat	95 104
3. Brain, Spinal Marrow, Nerves, and Senses	133 157
4. Lungs and other Organs of Respiration	333 333
5. Heart and Bloodvessels	34 34
6. Stomach, Liver, and other Organs of Digestion	87 74
7. Diseases of the Kidneys, &c.	10 9
8. Childbirth, Diseases of the Uterus, &c.	12 14
9. Rheumatism, Diseases of the Bones, Joints, &c.	5 7
10. Skin, Cellular Tissue, &c.	2 2
11. Old Age	38 65
12. Violence, Privation, Cold, and Intemperance	19 29

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	43	Convulsion.....	29
Measles	54		
Scarlatina	42	Bronchitis	32
Whooping-cough..	14	Pneumonia.....	59
Diarrhoea	35	Phthisis	113
Typhus	78	Dis. of Lungs, &c.	8
Dropsy.....	14	Teething.....	8
Sudden deaths ..	8	Dis. Stomach, &c.	8
		Dis. of Liver, &c.	10
Hydrocephalus..	29		
Apoplexy.....	26	Childbirth	11
Paralysis.....	17	Dis. of Uterus, &c.	3

REMARKS.—The total number of deaths was 79 below the weekly autumnal average.

NOTICES TO CORRESPONDENTS.

Communications have been received from M.D.—Mr. Richard Allen.—Mr. A. Wood.

Lectures.

COURSE OF SURGERY,

Delivered in the years 1846 and 1847,

BY BRANSEY B. COOPER, F.R.S.

Surgeon, and Lecturer on Surgery at Guy's Hospital.

LECTURE XIV.

ERYSIPELAS.—*May be considered as belonging more to the province of the physician than to that of the surgeon—Character of the inflammation—Erythema—Local signs of erysipelas—Constitutional symptoms—Epidemic or endemic influence—Postponement of surgical operations—Tendency to erysipelatous inflammation of head and face—Theory as to cause—Metastasis—Treatment—Inability to bear depletion—Punctures—Objection to long incisions—Employment of caustic and ointment to check extension of erysipelas—Rationale—Tonics—Support rather than stimulus—Often difficult to distinguish local inflammation of abscess from erysipelas—Liability to relapse—Necessity for attention to diathesis—Caution in performing operations where there is a tendency to erysipelas—Cases.*

ERYSIPELAS.

You may consider this subject, gentlemen, as belonging rather to the province of the physician than to the surgeon; but erysipelas so frequently follows local injury, that, unless a surgeon is acquainted with the phenomena connected with this disease, and the appropriate treatment for their relief, he would constantly be obliged to transfer the care of his patients to the hands of the physician. In fact, no better instance than erysipelas can be adduced to prove the necessity for a surgeon to render himself thoroughly acquainted with loco-constitutional disease.

Erysipelas is an inflammation of a very peculiar character, attacking the external surface of the body, and indicating all the usual signs of a morbidly increased action, attended with redness, heat, swelling, and pain, each of these offering characteristic marks. Sometimes it seems to attack the skin only, unattended with any concomitant constitutional disturbance: it is then termed erythema.

The redness of erysipelas is remarkable, on account of its sudden disappearance upon the slightest pressure, leaving a white spot; but the redness almost instantaneously returns upon the removal of the force. The intensity of the colour varies very much in

xL.—1041. Nov. 12, 1847.

different cases, and this variety depends more upon the constitution of the patient than upon the severity, or any peculiarity in the disease itself.

The heat of the affected part is of a burning character, and is described by the patient as producing a dull pricking, or rather tingling, sensation. The degree of swelling depends upon the circumstance of the subcutaneous tissues being affected or otherwise; for, when the skin alone is inflamed, there is little or no swelling or tension, and, in fact, the inflammation is at this period to be considered as merely erythematous; but, immediately upon the implication of the cellular membrane, swelling becomes a prominent feature of this disease.

The pain is seldom acute, but is said to resemble a tingling stiffness, and it produces invariably a restlessness which is highly characteristic of the disease. If pressure be applied to the inflamed part, the pain and uneasiness are very considerably increased. The local symptoms are generally preceded by considerable constitutional disturbance—such as pain in the head, full pulse, loss of appetite, rigors followed by dejection, debility, sometimes vomiting, and early delirium, if the head be the seat of the disease. Although these symptoms likewise frequently attend common pyrexia, there is something so peculiar in their nature—so sudden in their development—that every experienced nurse in a hospital recognises them as premonitory signs of erysipelas.

Medical writers have distinguished erysipelas by the terms phlegmonous, bilious, and local or erythematous. Were I to take this detailed view of the disease, I admit, gentlemen, that I should be rather encroaching upon the province of the physician. I shall therefore dwell especially on the phenomena resulting from local injury—"traumatic erysipelas."

The question naturally arises whether injury to any tissue can in itself produce the specific action of erysipelas without accessory constitutional predisposition. I am myself inclined to reply in the negative; for I believe that this disease is the result of a constitutional derangement, arising chiefly either from epidemic or endemic causes; for how frequently is it observed in this and every other hospital, that, when one patient has become affected with erysipelas, others are found liable to its attacks from causes much too slight to be considered capable of producing the like result under ordinary circumstances. This is so well known, that every hospital surgeon postpones the performance of surgical operations even after the patient has been prepared for the ordeal, if he is aware that erysipelas is present in the ward.

It is quite true that a healthy person

would probably resist the infection; but, under the depressing influence inseparable from an operation, it would be incurring an unwarrantable risk, to expose a patient to the continued influence of such a poison, particularly if the case is one which will, under any circumstances, admit of delay.

There is certainly a peculiarity in traumatic erysipelas, with respect to its so frequently following wounds of the head and face; and I consider that this may depend upon the insertion of all the muscles of this region into the skin, the tissue invariably first affected by this peculiar description of inflammation.

Hence, in the case of persons suffering from an attack of erysipelas in the face, the most complete state of quietude, and absence of all mental excitement, are desirable, as affording the only means of preserving these muscles in a perfect state of rest, as they are immediately put into motion by the operation of almost every external circumstance, or by the least mental disturbance.

Another peculiarity in erysipelas, not yet alluded to, is its erratic tendency, or what is technically termed "metastasis," which constitutes one of the most remarkable features of this complaint.

The consideration of this fact forms a very important point in regulating our practice, and especially in erysipelas of the head; for, however proper it may be to attempt suddenly to subdue erysipelatoous inflammation of the limbs or trunk, by the application of evaporating lotions, or any other means of abstracting the abnormal heat of the affected part, such treatment is quite inadmissible in erysipelas of the head or face, owing to the danger of producing metastasis to the membranes of the brain.

I have more than once seen a patient delirious a few hours after cold had been applied to an erysipelatoous scalp, and restored as quickly to consciousness by the substitution of warm fomentations for the evaporating lotion. The rationale of this is sufficiently obvious: the action is due to the free anastomosis between the vessels of the pericranium and of the dura mater, through the substance of the bones of the skull; so that any cause that propels the blood from the pericranium must produce a proportionable influx into the vessels of the dura mater.

Patients attacked by erysipelas (more especially in this metropolis) bear depletion very badly, and there are but few cases in which general blood-letting can, in my opinion, be admissible.

Leeches should never be employed in erysipelas, as their bite becomes a fresh source of irritation; and, indeed, it is frequently the exciting cause of this peculiar character of inflammation.

The only antiphlogistic plan, therefore,

left, is that of acting upon the secretions, which effect is readily produced by employing the following remedies;—*℞* Hyd. Chloridi, gr. iss.; Pulv. Jacobi veri, gr. iij. *M. ft. Pilul.*; Magnes. Carbonat. gr. x. *R* Sodæ Sesquicarbonat. *℞j.*; Vin. Ipecac. *℥ss.*; Mist. Camphoræ, *℥j.* *M. ft. Haustus adde Succ. Limonis Recentis, ℥ss. et in statu effervescentia sumendus bis terve quotidie.* Should the patient evince any typhoid symptoms, ammonia should be substituted for the soda.

If there be much tension of the skin, attended with small blisters, without remission of febrile symptoms, it should be punctured in several places, to allow of transudation of the effused serum. This operation generally affords great relief. With respect to the long incisions recommended by some surgeons, I consider that practice to be worse than useless, unless there be extensive sloughing of the cellular membrane, which will very rarely occur if punctures be made as soon as the necessity for such relief is indicated by the tension of the skin: indeed, I have known fatal sloughing sores induced by the practice of incisions, and in more than one case death occurred from the hæmorrhage immediately resulting from the operation.

When erysipelas becomes diffused, the vivid discoloration of the skin diminished, the tongue dry, and the general signs of debility manifested, stimuli are required; but in common cases generous support is preferable to stimulus: I therefore usually prefer porter to wine or brandy, excepting under the circumstances above mentioned.

Where the inflammation of erysipelas has a great tendency to spread, it has been recommended to attempt to check its course by cauterising with lunar caustic the skin above the inflammation. Some have recommended mercurial ointment to be employed with the same view; and indeed I have seen both of them produce beneficial results by circumscribing the extent of the inflammation. I presume that the lunar caustic and the mercurial ointment close the pores of the skin wherever it is applied, and, preventing the natural cutaneous exhalations, set up a new action, and so tend to prevent the spreading of the erythematous inflammation; for, as far as I have observed, any other ointment will answer the purpose as well as the mercurial.

This fact would certainly lead one to the belief that erysipelas is, at any rate at its commencement, a cutaneous disease, and the extension to the subcutaneous tissues the result of a secondary action.

Vesicles generally form in those cases which do not terminate by resolution; hence erysipelas has been classed under the order *Bullæ*, by Dr. Bateman.

In debilitated constitutions, diffused ab-

abscesses frequently follow erysipelatous attacks, sometimes even at a distance from the originally inflamed part. Indeed, I have occasionally seen abscesses follow wounds around which no erysipelatous inflammation had occurred, and yet subsequently diffused cellular membranous abscesses have formed in different parts of the body, attended with considerable local inflammation; but whether these could be regarded as erysipelatous affections I have frequently had much difficulty in determining. What I mean to express is, gentlemen, that it is often very difficult to distinguish the inflammation resulting from the formation of abscess in debilitated patients from phlegmonous erysipelas. In these cases, also, as in erysipelas, the abscesses are rarely limited by an adhesive boundary, but are diffused, indicating the extreme debility of the patient.

When abscesses result from erysipelas, they rarely extend beyond the subcutaneous cellular membrane, and do not appear to lead to absorbent inflammation, probably in consequence of the freedom with which the matter becomes diffused; while, on the contrary, when pus is formed in more deeply seated structures, as in subfascial and thæcal abscess, it is pent up by the inextensible tissues, and leads, therefore, to more urgent constitutional disturbance, and requires early provision for its evacuation.

Great care and attention are required after a patient may have apparently recovered from an attack of erysipelas, owing to the great tendency to relapse which generally exists in such cases; and it may, perhaps, be said—at least so my experience leads me to believe—that a person once attacked by this disease is ever after liable to its return from any exciting cause to inflammation—a circumstance which would seem to prove that the disease depends more upon peculiarity of constitution than upon the nature of the accidental injury, or even, perhaps, than upon any epidemic influence.

I have said, gentlemen, that it might be considered a deviation from my province to speak of bilious erysipelas, and other particular constitutional derangements modifying this disease; still do not for one moment imagine that I consider it unnecessary for you to study, and *scrutinously* too, the peculiarities, diathesis, and temperament of your patient; for you must remember that the slightest local injury can never occur without the restorative process being influenced by the age, sex, habit, and constitution of the subject; and whoever fancies that, because he has made himself acquainted with the name of the disease, he can at once apply some well-known appropriate remedy, will never advance beyond empiricism, nor establish his title to be considered in the light of a scientific practitioner; and I

would almost say that his practice would be dangerous in proportion to his rapid decision in the classification of disease, if that alone be his aim. After what has been said, as to the tendency to erysipelas following the wounds of the scalp, and skin of the face, let me urge you, gentlemen, to be cautious how you undertake even trivial operations, on these regions of the body, without first having duly prepared your patient for the effects they invariably produce in the system. In some cases you may be requested to remove small encysted tumors from the scalp—an operation so trivial that it may be executed by a mere tyro in the profession, but even the most experienced and skilful surgeon may risk the life of a patient, and his own reputation, by want of a little precaution.

Never, I say, undertake such a task without first well ascertaining the actual state of your patient's health, as to the absence of any organic disease, the condition of the bowels, state of the urine, and natural performance of the functions essential to a healthy state of body.

Several years ago I removed an encysted tumor from the head of a patient. Upon making a mere incision through the skin it immediately turned out, the operation of extracting it not occupying more than a minute. On the third day I considered my patient convalescent; on the fourth I was suddenly sent for to see him, and found that a most startling change had taken place in his condition. I should not have recognised him; his head was swollen to twice its natural size; not a feature could be discerned; and his complaints were urged in muttering delirium. I immediately ordered him (as his bowels were costive), a large dose of calomel, fomented his head and face, punctured the scalp, and prescribed diaphoretic effervescing draughts. The day following he had but slightly improved, although his bowels had been freely opened, and I immediately proposed a consultation. The gentleman who met me recommended bleeding—a remedy to which he especially trusted in all cases of febrile action. But as the patient had a very dry tongue, attended with delirium, and was complaining of great thirst, muttering in almost inarticulate sounds his desire for porter, I proposed that we should try its effect: this was consented to; and I held a pint of porter to his lips, he drank it off at a draught—soon fell into a sound sleep: when he awoke he was perfectly free from delirium, and from that moment his recovery rapidly progressed. In relating this case, gentlemen, I do not mean to inculcate the propriety of the invariable use of stimulus, but I do believe that in most cases it will be found a safer remedy than bleeding, more particu-

larly in London or any crowded city; nor have I formed this judgment from the solitary case just mentioned, but it is an opinion founded upon my own experience and the practice of my colleagues in this hospital as well as in private.

A lady applied to an eminent surgeon, to ascertain from him whether a small encysted tumor could be removed with perfect safety from her head; to which he replied, "certainly:" the operation was immediately performed, but seven days afterwards she was dead from an attack of erysipelas. The next case, as the patient was not attacked by erysipelas after the operation, may be considered out of place with regard to our present considerations; I have mentioned it, however, merely to exemplify the necessity of ascertaining the real constitutional condition before you venture to submit a patient to any mechanical lesion.

A short time ago, an individual came under my care with an external pile and a fissure in the mucous membrane of the rectum; he was considerably out of health, and attributed all his ailments to the sufferings he experienced in the passing of his motions, owing to the local disease; he urged me to relieve him by operation. I kept him, however, a week or ten days under my care before I operated, and by soothing remedies had somewhat improved his condition, when I removed the external pile, and drew the bistoury across the fissure, the whole time of the operation not exceeding half a minute. The patient felt immediate relief after the operation, he had little or no pain in passing his motions, but in the course of four or five days he was seized with symptoms of subacute peritonitis; calomel and opium, and leeches, were ordered, but four days afterwards he died.

Upon examination of the body, he was found to be the subject of granular kidneys, (the morbus Brightii,) which no doubt had caused his death.

It had been ascertained, during life, by my dresser, that his urine was albuminous; but I considered the severity of his suffering demanded the performance of this slight operation; although the sequel renders it a matter for consideration whether I was right, under these circumstances, in subjecting him to a fresh source of irritation.

From such cases as these you must be impressed, gentlemen, with the necessity of doing everything which the science of surgery can insure, so far as lies in your power, to place your patient in the greatest state of security before you subject him to any surgical operation, and even then never promise that any operation, however simple, will be perfectly free from danger, for depend upon it, it is as unwise to treat slightly the most trifling incisions of the skin, as it is dishonest

to attach to an operation more importance than it justly deserves.

Some surgeons suppose that it is better to perform what are usually considered simple operations at the moment, than to allow the dread of anticipation to remain on the mind of the patient, and then proceed to act upon this opinion without any preliminary precaution. There are, however, I believe, but few patients who will not duly appreciate the cautious recommendation of a surgeon to submit to some little preparatory discipline, and he will gain much more confidence from the patient by this display of his judgment, than from the hasty recklessness which evinces boldness and self-reliance, rather than judicious precaution.

LECTURES

Delivered at the Royal London Ophthalmic Hospital, Moorfields, June, 1847.

By W. BOWMAN, F.R.S.

LECTURE II.

Blood-vessels and nerves of the sclerótica and cornea—character of the nutritive process in these structures.—Morbid states of the sclerótica and cornea.—Sloughing of both cornea from defective nutrition.—Reparative process in the cornea—atomy of a simple ulcer of the cornea—formation of vessels in the cornea—effect of general disease on the cornea.—Lymph or pus in the lamellated tissue.—Pustules.—Opacities of the cornea—development of papillæ on the cornea—atomy of Staphyloma corneæ.

GENTLEMEN,—In my last lecture I reviewed the structure of the outer tunic of the eyeball, consisting of the sclerotic and cornea, and described the several layers of which the latter is composed. It remains for me, before proceeding to the more internal parts, to make some observations on the nature of the process of nutrition, as it obtains in these structures, and on the bearing of their anatomical construction on the nature and progress of some of their more important diseases.

Both the sclerótica and the cornea are sparingly supplied with the materials of nutrition, as a glance at the arrangement of the blood-vessels will show. The sclerótica is pierced behind with numerous arteries derived from the ophthalmic, termed the *posterior ciliary*; but these go almost exclusively to the choroid, only giving a few minute twigs to the sclerótica as they pass. In front, too, the arteries which have supplied the muscles of the eyeball, send forwards small prolongations beyond the

tendons, which are visible under the conjunctiva, and lose themselves in the sclerotica, about one-eighth of an inch from the margin of the cornea. These, however, traverse rather than supply the sclerotica, and anastomose with vessels of the ciliary muscle and iris. Hence, in the most successful injections, the sclerotica itself is with difficulty tinted by the artificial colour, and the microscopic inspection of parts so prepared, exhibits only a few slender capillaries coursing among the greatly preponderating mass of the white fibrous tissue. And if we pass from the sclerotica to the cornea, we shall find the most unequivocal proof that no blood-vessels at all encroach far beyond its border. The evidence which injections are capable of affording on this head is very decisive. We now know that the capillaries are, in almost every organ, definite and determinate tissues, having proper walls, which may be distinguished from the parts among which they lie; that they have a certain limit as regards minuteness, and that they form everywhere a closed system of tubes, porous, indeed, so as to be capable of transmitting fluid materials, both inwards and outwards, by a process of imbibition, but nevertheless having walls of unbroken membrane, without breach or orifice. Hence if an injected specimen exhibits a system of such canals, replete with artificial coloured contents—its ramifications regular, having margins formed by rounded, arched, entire capillaries—we may assert positively that the vascular net-work terminates naturally in those directions, and that the tissue beyond has been as impermeable to the red particles of the circulating blood as we find it to be to our prepared fluids. This is precisely what occurs in the case of the cornea. The vessels of the sclerotica, and of the conjunctiva covering the sclerotica, send numerous twigs towards the cornea; but all, on arriving within the corneal tissue, turn back, forming numerous arches, which run parallel to the margin of the cornea for some way, and then return from whence they came. Thus we have a striking difference between the sclerotica and cornea in addition to those before insisted on—that the one is permeated by blood-vessels, the other is entirely devoid of them.

I may say a few words here on the *nervous supply of the two structures*. No doubt the nerves of both are few; the sclerotica gives passage to the ciliary nerves, and although they have not been demonstrated, it is possible that it receives some filaments from them. In a state of health it seems to be very insensible, but when inflamed, like many other dull and almost insensible parts, it appears to be capable of becoming the seat of very acute pain. In the cornea, nerves derived from the ciliary are said to

have been discovered by more than one anatomist of trust; I cannot say that I have myself seen them, although I cannot doubt their existence; for when we remember that nerves in their peripheral distribution may lose their tubular nature and their characteristic microscopic appearance thence derived, (and I have constantly found the ciliary nerves do this,) we may well be content to receive *pain* as sufficient evidence that a part is not destitute of nerves. That the cornea has a degree of sensibility capable under some forms of irritation of being exalted to a considerable height, is matter of common experience to every one.

From what has been said, it may be safely concluded that the sclerotica and cornea are slowly renewed in their elementary constitution by the process of nutrition. No doubt the presence in or near them of the materials of change is absolutely necessary for the continuance of their life; but what I would endeavour to impress upon your minds is this—that their structure is feebly supplied with blood, or the nutrient part of that fluid—that the process of nutrition in them is therefore slow, gradual, and easily impaired, either by impoverishment of the nutrient material or by any mechanical interference with its due and regular supply. These observations apply more to the cornea than to the sclerotica, because the latter has vessels, the former has none; the latter, therefore, is supplied interstitially, as it were, with the power of life, growth, and nutrition; the latter must derive through the medium of its circumferential parts whatever is requisite to sustain the integrity of its more central portion.

Morbid states of the sclerotica.—I shall have but few observations to make, gentlemen, on the morbid states of the sclerotica, in their special relation to its structure: wounds of this part readily heal by the adhesive process, the cicatrix being semitransparent as in tendon; and minute punctures are generally harmless, even when they penetrate not only this coat but the choroid. It is possible that the readiness with which lacerations and incisions of the sclerotica heal, is ascribable to the thinness of the tissue, and to the fact that it has on both its surfaces an abundant supply of blood in the contiguous textures. The experience which surgeons have acquired in their operations on cataractous eyes, affords ample proof of the slight tendency which simple wounds of the sclerotica have to take on an unhealthy action. The form of inflammation which the sclerotica usually undergoes is the rheumatic: into the nature and symptoms of this it would be out of place to enter, as we must limit ourselves at present to the anatomical conditions.

In inflammation of the sclerotica, when

least complicated with conjunctival disease, its vessels are seen to be unnaturally filled with blood; its capillaries are distended, so as to become visible by imparting a tint to the fibrous tissue, and the minute arteries and veins enlarge and become tortuous. All these are distinguished by their purplish hue, compared with the more superficial vessels of the conjunctiva under inflammation.

In some delicate persons the sclerotica is so thin in its anterior part as to derive a bluish tint from the choroid underneath. This is no disease, but in cases of old-standing choroidal or other disease within the globe, which has operated so as to cause a slow and gradual distension of the outer coat, the pigment is in like manner disclosed under the bulging and attenuated sclerotica; and I have observed in some cases that under this internal stretching force the sclerotica is apt to yield in lines passing backwards from the cornea, so as to form slits or chinks more or less radiating, through which the choroid is more obviously seen. This depends on the disposition of the fibres of the sclerotica, which I alluded to in the last lecture, viz. their passing at the anterior region rather in a radiating direction from the cornea than in any other arrangement.

Morbid states of the cornea.—To the surgeon as to the anatomist, the cornea is a much more interesting and important texture than the sclerotica, and I therefore propose to be a little less brief in commenting on some of its principal morbid states, especially such as either illustrate, or are illustrated by its structure, as explained in the former lecture.

! And first, gentlemen, in evidence of the comparative feebleness of the process of nutrition in this texture, I shall relate the following case which occurred at this hospital during the present spring:

Sloughing of both corneæ from defective nutrition.—On the 8th March, a mother, herself reduced in strength and looking ill, brought her infant, 13 months old, to the hospital, on account of its eyes. I found that both corneæ were in a state of slough, flaccid, of a pale yellow, like macerated leather; that this slough comprised the whole area, except a very narrow belt of about 1-20th inch nearest to the sclerotica, from which a few minute vessels were shooting towards the line of separation which was already beginning to be established between the dead and the living parts. The conjunctiva exhibited very little vascularity, and had evidently not been suffering from inflammation. The infant was pallid and puny, with a pinched and anxious countenance. I found that the mother had been suckling the child till seven weeks from the time I speak of, being herself ill and weak, and very insufficiently nourished;

that on going into the workhouse they had been parted, and that she first noticed the eyes to look "weak" three weeks since. The bowels have been constantly purged for eight days; and she has taken Rhubarb and Magnesia. The compound powder of chalk, with opium, was given every four hours, with Liq. Cinch. of Battley, and beef-tea, with small quantities of brandy, and Mr. Howard kindly undertook to visit her at her own home. On the 11th (three days afterwards), I found more evidence of vascularity at the margin of the corneæ, and over the white of the eye, but with hardly any secretion. The bowels had been less relaxed, but the stools still green and loose. She had taken some wine and bark, but would not touch the beef-tea. She was evidently weaker, and moaned constantly. In two days afterwards she died.

In this instance we find the cornea falling into a state of gangrene from defective nutrition; the impoverishment of the blood, manifested in various degrees in the other textures of the body, here leading to the complete destruction of a tissue which naturally has a very small supply of that necessary fluid, and which therefore is but too ready to yield its vitality when that supply is withheld. The case of this poor child finds a parallel in others which have been related, as occurring from actual starvation, or the privation of all sustenance, and perhaps still more aptly in those animals which Magendie confined to a diet of sugar and water, or other non-nutritious food, and of which one of the more constant evidences of declining power was the sloughing of the corneæ, and the consequent destruction of the eyeballs. I may also mention the case of a woman who is now in attendance here, and who, on her first appearance some months ago, had a dull, hazy state of both corneæ; the surface having lost its brilliancy, and the whole texture being very uniformly obscured. The approach of this condition had been very gradual. It had been attended with no redness, nor was there, at that time, any excitement of the circulation in the neighbouring sclerotica or conjunctiva, or any development of new vessels in the cornea itself. She was pallid, but her muscular strength was not remarkably reduced, nor could I discover that she had been insufficiently fed in regard either to quantity or quality, or that she had any disease affecting a vital organ. Nevertheless, her pulse and countenance bespoke a system in which the powers of life, from some cause or other, were considerably depressed, and Mr. Dixon concurred with me in recommending a strictly tonic course of treatment, comprising steel and quinine, with such modifications in diet, place of abode, and mode of

life, as her situation appeared to render desirable. Under this plan, which has been continued up to the present time, a steady improvement has taken place in the condition of the cornea. The haze is clearing away in the most gradual manner, and without any unnatural vascularity of the part or neighbourhood, and her looks are much improved in every respect. I cannot help regarding this affection as simply the result of an impairment of the nutritive process in the whole body showing itself in a special manner in this texture of feeble power.

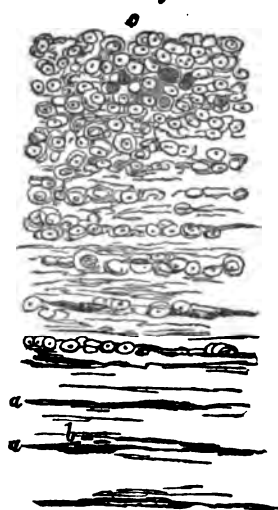
Reparative process in the cornea.—The cornea when healthy is readily repaired after injury; punctures and incisions being followed in general by speedy reunion of the divided parts, without suppuration or sloughing. The adhesive process is here presented to us in its simplest form, for it takes place in a structure which contains no blood-vessels, and therefore where none have been divided. But if we bear in mind that all tissues have a proper life of their own, of which their several properties and actions are the necessary manifestations, and that the blood-vessels are but ministerial to the proper life of the tissues they supply, by serving as the medium through which the materials essential to life are brought within their reach, and what is rejected by them is carried away, we shall readily understand how it is that a tissue which, like the cornea, originally grew, and has its ordinary life sustained without the presence of interstitial vessels, may be also repaired and renewed without them within certain limits. For the reparative actions, in their natural form, are nothing more than those of growth and nutrition, modified by the new conditions occasioned by external accident, and tending constantly to a removal of those new conditions, and the restoration of the normal state.

If we puncture or incise the cornea the first effect is a change wrought in the natural actions of nutrition then existing in the wounded part,—a change which can only be described as a mechanical interruption to those actions, and which, from the resultant train of phenomena, has been often called a stimulus. This is speedily followed by the presence of an increased quantity of blood in the vessels that are nearest to the wounded part, viz. in those of the conjunctiva and those of the sclerotica, and thus the materials from which the breach is to be made good are brought in greater abundance to the part that requires them. We cannot doubt that as these vessels, comparatively so remote, are thus affected, so the part of the corneal tissue intervening between them, and the exact seat of injury, is pervaded by

a corresponding change, of which the general expression is this,—that it is one of exalted nutritive vigour; the play of forces, and the interchange of material which mark the nutritive function, being more energetic and more rapid than before. And whatever phenomena of this kind occur in the intermediate tissue are concentrated in an especial manner about the wound itself. In a short time, even in the course of a few hours, as I have ascertained in the case of the lower animals, the vicinity of the injured part begins to contain in abundance those minute particles, nuclei, or cyto-blasts, as they are called, which exist naturally, though sparingly, in the corneal lamellae, and the relative quantity of which may be regarded in most tissues as an index of the intensity of the nutritive function. These particles, I say, hastily, indeed, and imperfectly formed, are speedily found choking the interstices of the tissues in the lips of the wound, and covering its surface, so as to occupy whatever space was left between its opposite sides, and bringing them into temporary union. From the presence of these embryo materials of new tissue, intermingled among the elements of the old, is derived that slight milky opacity which envelopes and marks the seat of wound, and which, if the injury be extensive, may engage a considerable extent of the cornea in the direction of the neighbouring blood-vessels. The subsequent changes I need not particularly dwell upon. The breach being filled, the new material is gradually transformed into products, resembling those tissues among which it has been poured; the blood-vessels, at the border of the cornea, resume their size, and at length, in the most favourable instances, all vestige of the wonderful process which has taken place vanishes away.

Such is the progress of the actions which usually ensue when the surgeon punctures the cornea with his needle for the purpose of operating on a cataract, and the same takes place, in general, where there is no destruction of substance, and where the wound is not too large, and its margins have been accurately adapted. But it will readily be conceived that, in cases of wounds with loss of substance, or attended with extensive division of parts, the demands on a tissue so feebly nourished must exceed its limited powers. The result will then oftentimes be the failure of the adhesive process, with the establishment of a temporary ulcer or open breach, or with an actual sloughing of the lips of the wound. The reparative actions then advance more slowly, and in a modified form, by a species of granulation very similar to that which obtains in corresponding states of the skin or mucous membrane.

FIG. 5.
Free surface.



Vertical section of a minute ulcer on the surface of the cornea of a cat, three days after the application of caustic potass. *a, a*, indicate the position of the corneal tubes in the sound tissue below the bed of the ulcer; *b*, nucleus of the lamellated tissue. The surface of the ulcer is seen formed by a crowd of vesicular nuclei, most of them with a nucleolus. These were in various stages, and mingled with firmly granular matter. Magn. 300 diameters.

I had an opportunity last year of examining a small ulcer which had been occasioned on the centre of the cornea of a cat, by the contact of a small piece of caustic potash, three days previously. The conjunctival epithelium and the anterior elastic lamina had been removed, and the superficial lamellæ of the cornea proper formed the bed of the ulcer. These were softened and semi-opaque, from the presence of great numbers of the nuclei already alluded to, in and around; and it was interesting to observe that their numbers were greatest on the surface of the ulcer and diminished in proportion to their distance from it. In the section of the ulcer, represented in fig. 5, the nuclei are seen occupying chiefly the position of the corneal tubes, especially in the deeper part. We have in this example, perhaps, the simplest condition of an ulcer that can occur in any texture, and it is therefore well deserving your attention.

Development of vessels in the cornea.—Few things are more interesting in the history of reparative processes in the cornea,

than the fact which we observe every day, of its capacity of becoming furnished with blood-vessels derived from those of the conjunctiva and sclerótica. If any irritation is long kept up, or if an ulcer exists having to heal by a slow and gradual process, we find in the interval between it and the neighbouring vessels, a greyish, half-transparent tract, distinguishable from the healthy cornea; and in this there are soon developed a series of vessels which presently declare themselves as arteries, capillaries, and veins, carrying the blood in a circuit through and about the seat of reparative action. It is obvious that these are produced out of new matter, laid down before their actual formation in the line which they are to occupy. As a punctured wound is made good by the simple transformation of the new matter into the natural tissue, without the formation of new vessels, so, when time allows, and the extent of repair requires it, a portion of the new material is developed into vessels, which may serve the temporary purpose of expediting and fortifying the reparative actions, by bringing to them an immediate and interstitial supply of blood. Thus is the cornea made dull and useless for a time, by the introduction of a structure destructive of its transparency, in order that its integrity may be restored according to the natural laws of growth. When its restoration is somewhat advanced, and less blood is required, these new vessels dwindle; their coats, which are at best imperfectly organised, soon disappear, and the cornea becomes once more permeable to light. I have a specimen in which these adventitious vessels are displayed injected with artificial colour. They pass into the cornea from the conjunctiva, and from the whole thickness of the sclerótica, and occupy, in this particular instance, almost the whole thickness of the lamellated tissue.

The cornea may further become vascular without ulcer or wound, and as a result of continued inflammatory action, and this in two principal ways: either the new vessels may form a network on the front of the cornea, anastomosing on all sides with those of the conjunctiva, and only obscuring the lustre of its surface, or they may pass in very close and more parallel series from the sclerótica, so as to make the cornea uniformly of a dull red. The former state is the result of long-continued irritation of the conjunctival epithelium by granular lids or displaced lashes, and the vessels in all probability lie immediately beneath the anterior elastic lamina in the more superficial lamellæ of the cornea proper; but I have never had an opportunity of actually ascertaining this. They can hardly lie over it, and it is too thin to contain them in its

substance. The latter condition results from chronic inflammation of the lamellated tissue, and is attended with an opaque deposition of new matter. The vessels run in among the lamellæ, and may occupy the entire thickness of the cornea proper, rendering it nearly impervious to light. In both the forms of morbid vascularity now mentioned, the vessels are to be regarded as originally a result of diseased action, not as themselves the disease. They are developed under the salutary or conservative law of the organism, to enable a part of feeble vitality to sustain a morbid action to which it has become subject, and under which its vitality would otherwise sink. It is true that their presence marks the existence of disease, and is to a certain degree an index of its extent, but we must be on our guard against imagining that it constitutes its essence. Unless these vessels had been developed, the diseased process would long ago have terminated by the total destruction of the tissue. If, in the case of the impoverished infant which I related just now, there had been sufficient vigour in the nutritive and organising process to fill the corneal tissue with offshoots from the surrounding vessels, the eyes might not have perished.

The cornea, and other parts of low vitality, or of such a texture as cannot speedily develop new vessels, often fall into gangrene under any sudden inflammation, because their vascular supply is either very limited, or cannot expand in correspondence with the demands of the morbid action. On the other hand, practical surgeons know that it is very difficult to induce destructive inflammation in erectile tumors, which are distinguished by the abundance of their vascular supply.

We may even go further, and maintain that these adventitious vessels are necessary to a cure, and to their own removal, which may seem a paradox, but is nevertheless a very sustainable proposition. For as the morbid products (including the vessels) laid down in the cornea, require for their existence a certain accession of new material, in the way of continuous nutrition, so they cannot be removed unless means are found for the absorption and removal of the old material of which they are composed, and these means are mainly the vascular channels. As long as the material capable of being removed remains, the vessels remain also, though gradually, atrophied, and ready to disappear; and sometimes when the morbid products have been so long laid down as to have become organised into permanent forms of morbid and opaque tissue, the vessels, in reduced number, are found to remain, as being necessary for the existence of that which cannot now be

taken away by any interstitial process of absorption, and which must therefore be either nourished or die.

The unity which reigns throughout an organised body of so much complexity as our own, renders every part liable to be influenced by the state of the great organs subservient to nutrition; the digestive which provide, the respiratory which renovate, the circulating which distribute, and the excretory which purify, the blood. The nutrition of every organ or tissue is subject to derangement, when the blood from which it derives its materials of renewal is impoverished or altered in quality, or when that healthy balance of the circulation is lost, to which Dr. Farre called your attention a short time ago.

It is not to be thought, therefore, that the morbid phenomena of any of the textures of the eye, or of the body at large, can be rightly comprehended by one who never has regard to the condition of what is termed "the general health," and, least of all, those of a texture like the cornea, which, being itself bloodless, and deriving its supply of nutriment by a frail texture from surrounding parts, must necessarily be obnoxious in a peculiar degree to certain of those disturbances which another more favoured part might have sufficient vigour of life to disregard or overcome. It would be very easy to enlarge on so fertile a theme; but I must dismiss it with this simple allusion, or it would lead us too far from the proper subject of these lectures. It is perhaps of even greater importance still that these views should influence our minds in considering the propriety of an operation for cataract in any particular case, and especially of that of extraction, which involves an extensive division of the corneal tissue, and to the success of which, reparation of the wound, by the first intention, is absolutely essential.

Lymph or pus in the lamellated tissue.—

As a result of inflammation of the lamellated tissue, lymph or pus may be formed in the interstices of the lamellæ, attended, in the first instance, with irregular haze, and then with mottled or patchy opacity, as it accumulates in greater abundance in certain situations. If the inflammation be of an acute kind, and the effusion rapid, so as to gorge and distend and press upon the lamellæ too much before their supply of blood can be suitably augmented by newly-organised vessels, and especially if the system be at the same time in an enfeebled state from defective nourishment, or the scrofulous diathesis, the lamellæ become irregularly separated from one another, their tissue is broken up and destroyed, and a slough results which is usually of a flattish form, often engaging a considerable area of

the cornea, but not its entire thickness, *i. e.* following the direction of the lamellæ; or a simple abscess may form, which may discharge itself either backwards into the aqueous chambers, or on the external surface of the cornea. In either case it very commonly happens that the remaining part of the thickness of the cornea gives way, making a complete perforation, through which the aqueous humour escapes, and the iris prolapses. The injury done to the eye by such extensive disease is severe and permanent; a portion of the cornea has its place supplied by new matter, which becomes developed into an opaque tissue very different in constitution and elementary arrangement from that which has been removed, and the pupil is more or less distorted or dragged away from the axis of vision.

If, however, the inflammation of the lamellated tissue be less acute, and less disposed to run rapidly to destructive results, the lymph which is poured out collects in small portions among the lamellæ, giving an irregularly mottled aspect to the cornea, because some parts retain more of their transparency than the rest, though all are dim; and vessels are gradually formed in the corneal tissue, entering it at various depths from the neighbouring sclerótica. When this occurs, the sclerótica itself, for a short distance from the cornea, appears of a dull red, owing to the augmented quantity of blood passing through its vessels to supply this new demand. If the disposition to the formation of lymph in the corneal tissue continues, the enlargement of its vascular supply tends to accelerate the subsequent changes, the whole tissue gets inter-fused with opaque matter and additional vessels, and the original lamellated structure becomes thickened, softened, and obscured. After so delicate and important a part has been apparently spoiled by a serious disease, it is not a little interesting to notice how completely and how speedily, in many instances, its perfect transparency may be restored by timely and judicious treatment. For in such cases you will observe that the original tissue of the cornea is not in any measure destroyed, or its arrangement permanently altered, unless the duration of the morbid state have been considerable, and time have been thus afforded for the organization of permanent forms of unnatural tissue in its interstices. Moreover, when once the inflammatory action and the inclination to the formation of morbid products have been subdued, the blood-vessels which pervade the deteriorated structure begin to assist largely in its restoration, by expediting the absorption and removal of the newly-deposited lymph; and in proportion as this clearance is effected the vessels themselves diminish in size, and finally disappear. The

speed and completeness with which the cornea resumes its previous state will depend much on the promptness with which the treatment is undertaken, and the energy of the nutritive function in the part and in the whole body. In scrofulous subjects, who are especially prone to this affection, it is notorious that there exists in the constitution a grave and deep-seated defect, which manifests itself chiefly in imperfect or perverted nutrition; and until this is in some degree corrected, this disease can hardly be checked, or its consequences got rid of.

The cornea evinces its near alliance with the integumental tissues, by its disposition to the formation of small pimples, or *phlyctenule*, on its anterior surface. These, too, are most common in young strumous subjects: they are generally situated at or near the margin, and appear on the conjunctiva at the same time. They are slow in their progress, and ere they have reached their full size, are generally provided with a leash of conjunctival vessels, which give a characteristic appearance to the eye. They are formed on the *front* of the cornea, and, I should suppose, immediately under the anterior elastic lamina, and the vessels they acquire also, of course, lie under that lamina, and come from the sub-conjunctival tissue. These pimples may contain a minute quantity of lymph, which may become organised into a raised vascular tubercle, or they may advance into the pustular stage, and form ulcers by opening on the surface, with a destruction of the anterior elastic lamina and the conjunctival epithelium. An opacity remains after they are healed, which is usually proportionate to the previous depth of the ulcer; but it is gradually lessened with the growth of the little patient, and often altogether disappears. Occasionally such an ulcer will heal with a depressed but nearly transparent surface, leaving a mark only apparent to others in certain positions of the eye, when the light is reflected from the part; but for the same reason painfully obvious to the patient himself (if it happen to be situated near the pupil) by the distortion of objects which it occasions.

I shall now, gentlemen, say a few words concerning *opacities of the cornea*, such as are commonly left by a variety of causes in different portions of the corneal tissue, and shall endeavour to explain their nature and seat according to the particular tissue they affect.

We have already seen that the proper laminated tissue is capable of enlarging its vascular resources for its support under disease, and for the subsequent removal of diseased products, to such an extent that if it have itself escaped disorganization, it is able, under favourable circumstances, to completely resume its transparency. The

nature of the nutritive process in the laminated tissue is such that this tissue recovers itself in a great measure, by timely treatment, from almost any amount of inflammation and consequent effusion which falls short of actual destruction of its elements. But when these elements are at all displaced or consumed under the morbid process, then permanent opacity is very likely, and indeed almost certain, to follow: for so artificial is the mechanical arrangement of the elementary lamellæ, on which the transparency of the cornea depends, that when their substance is once removed its place cannot be supplied with a tissue of an equally elaborate organization. The new material, though its bulk and strength may be equivalent to those of the old, is fibrous instead of being lamellated, and opaque instead of being translucent. It contains a considerable quantity of yellow fibrous tissue, intimately mixed with the white, and both most irregularly interwoven and ill-developed—ready to become the nidus of small granules of earthy or fatty matter, such as readily settle in parts of deteriorated structure. From this condition recovery is not possible; the blemish has become indelible.

It is to be observed, however, that during the progress of the reparative process, there exists in the part and its immediate vicinity a quantity of fresh material of that kind which denotes an over-activity of the nutritive function, and which, not being wanted for conversion into permanent tissue, will in due course be absorbed. This augments the opacity while it lasts; and it is not till a certain time has been allowed for its removal, after the healing of the breach, that we can say how extensive or deep the permanent opacity may prove; we may generally venture to predict a gradual improvement during some time, in a recent opacity, particularly in young subjects.

What I have now said applies to the greater part of the more common opacities of the cornea: I may allude to one or two other forms which may prove interesting in regard to the question of their precise seat. There are some varieties which appear to be on or near the very surface of the cornea, and which it is probable may occupy the anterior elastic lamina. The very opaque chalky-looking films which often follow the application of quicklime or new mortar to the eye, seem to be of this kind, and so, also, do those which have been supposed by some to be stainings of the surface of the corneal tissue by a deposit from the lead lotion in common use. Occasionally we have a superficial excoriation of the cornea—one can hardly call it an ulcer—which the epithelium limits with abrupt edges, thus favouring the accumula-

tion, on the depressed surface, of the frothy mucus or sud which the movements of the lid furnish. The opacity thus produced is often very opaque, and, unless you were aware of its cause, might seem more serious than it really is. A lens, or the point of a needle, will inform you of its real nature.

There is another form of opacity, which I believe to have its seat in the anterior elastic lamina, although it is vain to endeavour to prove it, except by a section of the parts. It has a silvery lustre, and a very fine texture of interweaving striæ, and it creeps very gradually from near the border, over the surface of the cornea, towards the centre. The epithelial surface retains its smoothness and lustre, and the opacity does not appear to have much depth. Other varieties of opacity, very chronic in their course, and evidently not inflammatory, are liable to form, as I believe, in the same tissue. They may be of a brown tint, with an indefinite margin, and may affect both corneæ at the same time. I am not aware that these are particularly described in books, nor whether they admit of removal, or even arrest. They are probably connected with an imperfect nutrition of the eyeball, and must be left to take their course.

There is a variety of opacity consisting of minute dots, sometimes so small as not to be distinguished separately without a lens; at others, as large as a small pin's head. These are evidently seated on the posterior part of the cornea, and may be referred to the posterior elastic lamina. They accompany an inflammatory affection in which the walls of the aqueous chambers seem to be chiefly involved, in which the iris is usually mottled and dull, the pupil inactive, and the sclerótica more or less injected. Such a dotted opacity was long since pointed out by Mr. Wardrop, and admits of removal, provided the proper treatment is commenced early enough. It probably consists of an ordinary inflammatory deposit of lymph.

There is still another kind of dotted opacity, occurring in the posterior elastic lamina, which I would distinguish from all those yet mentioned, and which is met with in eyes which have suffered a slow disorganizing process, through sympathy with the opposite organ previously lost by operation or accident. In this the dots are remarkably round and separate from one another, often brownish, and therefore overlooked, and scattered pretty uniformly over a portion or the whole of the cornea. Though these sometimes grow fainter under appropriate treatment, I have never seen them altogether removed.

Warty opacity of the cornea.—It will readily be conceived that opportunities but seldom offer of submitting specimens of the several forms of opacity to exact scrutiny by

the microscope. On this account I shall make no apology for describing the appearances of an opaque spot which occurred on the front of the cornea of an ox, and which I examined in the fresh state. It was about an eighth of an inch across, slightly raised and densely opaque, and it seemed to have been the result of an ulcer, for the lamellated tissue was involved to a slight depth, and had been replaced by new tissue, as represented in Fig. 6. This new tissue was dense

FIG. 6.

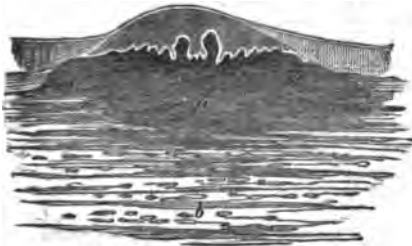


FIG. 6.—Vertical section of an opacity of the cornea of an ox. *a*, new tissue in place of destroyed lamellated tissue: papillæ are developed on it, surmounted by opaque and thick conjunctival epithelium, or, as it might be here called, epidermis. *b*, healthy lamellated tissue below the opaque spot. (Magnified slightly).

and fibrous, and hardly admitted the light to pass through it even when cut very thin. It contained a large admixture of irregular nuclei and elastic tissue passing in all directions. But what was most remarkable was, that this substitute for the proper corneal tissue was thrown up under the conjunctival epithelium in the form of numerous *papillæ*, arranged in much the same way as we find them in the more highly developed parts of the skin, though apparently without vessels, and of a texture too opaque to be precisely described. The *epithelium* over these papillæ was likewise opaque and diseased, being composed of a compact aggregation of nucleated particles, which contained numerous opaque granules, and failed to present that regular gradation from the spheroidal to the scaly figure, which is natural in this situation. The extreme surface only was scaly. I cannot help regarding this morbid condition as one of considerable interest, both as a proof of the affinities of the cornea to the integumental tissues, and as an example of the definite organization of the new materials into persistent forms, opaque and otherwise different from the original structure which they supplant, and incapable of remedy.

I shall conclude the present lecture with a short description of the structure which

replaces the cornea when wholly or partially destroyed, so as to constitute the state known as *staphyloma*.

The whole thickness of the cornea, in a larger or smaller extent, having perished from any cause, the iris is exposed, and occupies the breach, becoming adherent to the border of the gap formed by the removal of the lost part. If the contents of the globe do not further escape, and the eyeball consequently collapse, time is afforded for reparative processes to take place, by which the opening is filled with new material by granulation. At first this new material is soft, vascular, and nearly on a level with the surrounding parts; and, if nature is allowed to proceed with her operations undisturbed, it gradually acquires firmness, toughness, and considerable density, so as to appear not unlike the original cornea, except that it is opaque. It becomes covered with an epithelium continuous with the conjunctival, just as an ulcer of the skin acquires an investment of cuticle as it heals. This process was first explained by Mr. Wharton Jones, in an able paper published in the *MEDICAL GAZETTE*, vol. xxi. p. 847. Now in some cases, from causes which it is unnecessary for me at present to specify, this cicatrix continues to retain the contents of the globe within their proper bounds, and the patient experiences little inconvenience beyond the loss of vision; but in other instances the new material begins after a time to evince its want of coherency and strength, by bulging slightly under the pressure occasioned by the accumulation of fluid behind it,—that is, of course, behind the iris, in the posterior chamber of the eye. Should the projection increase beyond a certain size, it assumes an unsightly appearance, interferes with the movements of the lids, so as at last even to prevent their closure, and, in a word, grows into such a source of annoyance and irritation, that it requires to be got rid of. This is usually done by the knife, and, the lens being allowed to escape, the eyeball permanently shrinks to a small size.

The whole substance of the cicatrix being shaved off from the front of the globe, affords us, now and then, the opportunity of examining its structure in the perfectly recent state, which we can seldom do with any other of the morbid tissues of which this organ is the seat. I had such an opportunity last summer, in the case of a little girl; and the following, in few words, is a description of the structure of the tough opaque membrane which occupied the place of the lost cornea. Its thickness was very unequal; its posterior surface, to which portions of the iris adhered, being irregularly pitted, or, as it were, worm-eaten; its anterior surface was formed by a thickish

coating of epithelium, somewhat resembling cuticle, being composed of eight or ten layers of cells, the deep ones globular, the superficial ones scaly, and more like epidermic cells than those of the healthy cornea. There was no anterior elastic lamina, and no posterior elastic lamina. The entire remain-

ing portion of the thickness of the staphyloma consisted of a dense and most irregular interweaving of white and yellow fibrous tissue, with imperfectly developed nuclei intermingled, and the meshes of the tissues large, unequal, and open on all sides.

FIG. 7.

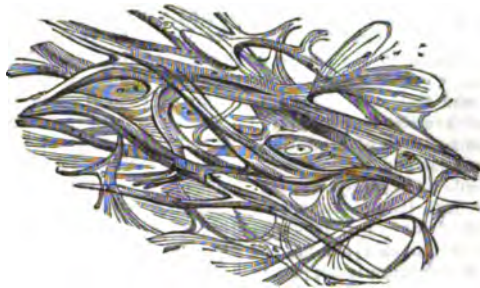


FIG. 7.—Section of staphyloma; treated with acetic acid: from a girl. (Slightly magnified.)

In this condition we have an eminent example of those results of the reparative action, after loss of substance of the cornea, which we have already had occasion to notice as the consequence of ulcers or small sloughs, the difference here being that the new material is derived in a great measure from the

vascular iris, and not merely from the cornea itself. We see how far the reparative powers fall short of restoring the complex and elaborate structure of the cornea as it is originally laid down in the development of the body. The thickness of the new cuticle is attributable to the constant friction of the lids.

Original Communications.

A COLLECTION OF FACTS ILLUSTRATIVE OF THE

MORBID CONDITIONS OF THE PULMONARY ARTERY.

AS BEARING UPON THE TREATMENT OF CARDIAC AND PULMONARY DISEASES.

By NORMAN CHEEVERS, M.D.

[Continued from p. 756.]

ACUTE INFLAMMATION OF THE PULMONARY ARTERY (continued).

ACUTE inflammation of the pulmonary artery may supervene in cases of *phlebitis* occurring under various circumstances. As, for instance, (1.) where inflammation of a portion of the venous system occurs spontaneously as the result of some grave constitutional defect; (2.) in cases of *phlebitis* of the uterine veins supervening upon parturition; and (3.) after injuries and surgical operations. I shall quote briefly the principal recorded instances of the disease, as developed under each of these conditions.

It appears that in females who have long

been the subjects of derangement of the catamenial function, and in whom that diseased state of the fluids which characterises the worst form of chlorosis has consequently been produced, there occasionally arises a tendency to spontaneous inflammation of the uterine veins, which usually extends merely to the communicating vessels of the pelvis and to the crural vein, producing a variety of *phlegmasia dolens*. The disease rarely advances beyond this point, but the following case, by M. Lediberder*, shows that it is occasionally attended with very extensive lesions in various portions of the vascular system, and that acute inflammation of the pulmonary artery may occur at some period of its progress.†

A young woman, æt. 21, of a strong constitution, who had always lived under cir-

* Quoted by M. C. Baron, Archives Générales de Médecine, 3d Series, t. ii. p. 18.

† It appears that, in M. Lediberder's case, the state of the uterine veins, and even of the internal iliac on the right side, was not investigated; but there are strong grounds for believing that, in the majority of instances of this species of *phlebitis* occurring in amenorrhœal subjects, the mischief originates in that set of vessels. It is possible, however, that, in this instance, the inflammation commenced either in the crural vein, or near the bifurcation of the cava. An accident which is of by no means very rare occurrence in various forms of cachectic disease.

circumstances favourable to health, and who began to menstruate at the age of 17 years, entered La Pitie, on the 6th of April, 1837, having suffered for two years from the symptoms of gastralgia and chlorosis, which had gradually increased in intensity during the last three months. On the day of her admission she was attacked with vertigo, delirium, excitement, and headache, unattended with any lesion of movement or acceleration of pulse. The cerebral symptoms gained their height in the course of twenty-four hours, remained stationary for about four days, and then diminished gradually, but had not completely disappeared by the 20th, when an attack of hemiplegia, affecting both sensation and motion on the left side, supervened. The paralysis of sensation lasted four days, that of motion six days. On the 5th of May, five days after the disappearance of the last symptom, she was suddenly seized with excruciating pain in the right lower extremity, with swelling, and tension, and dilatation of the superficial veins of the limb, in which arterial pulsation could not be felt. Besides these local symptoms, the countenance appeared sunken, the body generally was cold, and the pulse small. In the course of twenty days these new symptoms had passed off, but on the 20th of June another formidable train of symptoms suddenly made their appearance. After two days she began to suffer from pain in the left hip: in the evening, at about half-past eight, she complained of an acute pain in the loins, and went to bed. Her face was pale, and expressive of suffering. She now complained of a feeling of suffocation; she breathed high, and with great difficulty; the heart's action was very rapid and violent. She shortly fell into a state of syncope, which lasted three minutes: during this faint, there occurred a very abundant alvine evacuation. She came to herself spontaneously, and for a few moments felt relieved: the palpitation was calmed, but the dyspnoea continued. In a short time the difficulty of breathing increased; she complained of pains in the abdomen; the body grew pale, and was covered with a cold sweat; then the agitation and suffering became extreme. Sensation ceased in the extremities, she screamed, wept, and exclaimed that she was dying. The breathing became more and more difficult, until at last the patient merely gasped. At about ten o'clock she expired without agony or convulsions. On examination, there was found a very considerable softening of the left cerebral hemisphere. The heart did not present any alteration, with the exception of a marked thickening of a portion of the left auricle just above the mitral orifice. There was a large quantity of soft dark coagulum in each of the auricles; the ven-

tricles contained less blood. The lower part of the left internal jugular vein contained a yellow fibrinous clot, of firm consistence, and adherent to the lining membrane. The coats of this vein were more than twice their natural thickness, and the surrounding cellular tissue was indurated to the extent of a line. The lower part of the vena cava contained a clot which adhered posteriorly to about one-fifth of the circumference of the vessel. This coagulum was prolonged into the veins of the lower extremity, and it was found to be more and more adherent the lower it was traced. It adhered to the entire circumference of the crural vein: it passed but a short distance into the left hypogastric and iliac veins: it was prolonged into the crural vein and its collateral vessels, and extended into the upper part of the veins of the leg. Above, the clot was rather firm, and of a dark-grey colour; lower down, it became of a more sanguine colour, was less firm, and presented here and there small cavities. Near the crural arch, it was so adherent to the vessel as not to admit of separation except by a careful dissection; the walls of the vessel were somewhat thickened, and its investing cellular tissue was rather indurated. Various bulgings appeared here and there at the points of entrance of the large collateral veins; the vessel was converted into a complete cord. The pleural cavities each contained about three ounces of reddish limpid and transparent serosity; the lungs were entirely free from adhesions, they were of a reddish purple colour anteriorly, and purple behind; they contained much air in front, but were dense posteriorly. In this situation they were cedematous. They did not contain any granular matter or tubercles; the bronchial tubes were perfectly healthy. The two principal branches of the *pulmonary artery* contained coagula which were prolonged into the tertiary divisions of the vessel, where they terminated. These clots almost completely filled the calibre of the arteries. They were of a greyish colour marbled with black, of a cellular appearance without distinct layers, and of firm consistence; they could not be easily torn; they were unattached except in about one-sixth of their circumference. Their surface was more smooth towards the point of adhesion, and was covered by a fine membrane, which became gradually lost in the lining membrane of the vessel. Upon being stretched, this membrane separated into minute cellular filaments. The adhesions formed by the clots were more extensive on the right than on the left side; beyond their tertiary divisions, the pulmonary arteries were wide; the pulmonary veins did not contain any blood.

It may be questioned whether the train

of morbid processes developed in the above case resulted directly from inflammation of the pelvic veins, giving rise, either to the direct extension of the disease along the vascular tract, or to the entrance of purulent matter into the general circulation; or whether the cerebral, venous, and arterial inflammations were not the separate results of a vitiated condition of the circulatory fluid, giving rise to a disposition to acute inflammation in various parts of the blood-vessel system. In the absence of fuller details, I am strongly disposed to adopt the latter view. The deterioration of the fluids which results in ordinary cases of amenorrhoea and chlorosis, may not generally be sufficiently extreme to give rise to organic disease of any portion of the vascular system, but it is evident that, in extreme instances of this condition, where protracted suspension of an important excretory function has given rise to a state of extreme cachexia, attended with a highly morbid state of the vital fluid, there certainly does exist a marked tendency to the spontaneous development of acute and subacute forms of inflammation in various parts of the body, and more especially in the structures of the blood-vessel system. It would, of course, be out of place to enter more fully into the consideration of this subject at present, but the point is one that deserves a most careful investigation.

The two following cases, reported by Cruveilhier,* afford the most complete examples on record of acute inflammation of the pulmonary artery, as occurring in association with uterine phlebitis following labour.

A woman, *ætat.* 29, of a highly nervous temperament, was delivered of her first infant, at the Maternité, on the 12th of July, 1830. Considerable hæmorrhage followed the labour. The patient had a very anæmial appearance; her face was pale, her pulse small and frequent, and she complained of great debility. There was severe hypogastric pain in the region of the uterus, augmented by the slightest pressure. Commencing uterine phlebitis was diagnosed. 13th. The hypogastric pain had diminished, the febrile condition continued, but in a less degree. 14th. The secretion of milk was established, (the woman suckled her infant.) On the three following days there were copious sweats, accompanied by various nervous symptoms, headache, and a tendency to syncope. On the 18th, 19th, and 20th, she was more tranquil, but the pulse remained frequent. The hypogastric pains returned, and extended over the whole abdomen. The administration of pills containing calomel and

digitalis produced frequent evacuations, which were followed by relief. On the 23d she complained of very severe pain on a level with the left false ribs: she stated that she had been liable to this symptom. Examination of the chest did not give any satisfactory result. The pain was not removed by frictions and cataplasms, but yielded to a blister applied on the 24th. From the 25th of July to the 3d of August the patient appeared to be convalescing; she suckled her infant with more success than on the preceding days. On the 3d new symptoms presented themselves: oppression, cough, difficult expectoration, anxiety, nervous excitement, and extreme frequency of the pulse. There was no tenderness in the hypogastrium. Exploration of the thorax gave no very definite indications of disease; percussion developed a natural sound; auscultation afforded only a slight gurgling at the base and posteriorly. The secretion of milk was suspended. On the two following days her condition remained unimproved: the face was sunken; there was oppression and cough, with great distress; the pulse was very frequent. After vomiting and purging had been produced by an evacuant, the patient ceased to make any complaint. There was now diarrhoea. The pulse became more and more frequent: there was no expectoration. She died on the 9th, twenty-eight days after her accouchement, and six from the occurrence of the last exacerbation of her symptoms.

Examination.—In the abdomen there existed no traces of peritonitis, with the exception of slight arborescent injection here and there upon the surface of the large intestines; otherwise, the intestinal canal appeared healthy. The uterine and ovarian, and nearly the whole of the branches of the external iliac veins, resembled hard cords, being filled with dense adherent and decolourised clots. The left external iliac, and the left crural veins, with every one of their divisions, contained coagula, which were less dense and less adherent, and which were evidently of recent date. At the base of the left lung were found two small purulent cavities, circumscribed and superficial, and distinguishable through the pleura by their yellowish-white colour. In the interior of one was a little adherent slough. Many other points of the surface of the lung presented indurations, with various degrees of redness; one of these resembled a small apoplectic effusion. The posterior halves of the inferior lobes of both lungs were rendered perfectly inadequate to respiration by infiltration of sero-purulent matter. Upon incising the lung in different directions, firm concretions were found filling the branches of the *pulmonary artery*. This vessel, when carefully opened, presented a sanguine con-

* Anatomie Pathologique, Tome 1, Liv. 2, pp. 18 et seq. Pl. 1 and 2.

cretion, which was decolorized and slightly adherent to the parietes; it branched with the vessel, penetrating into some of the very small ramifications. It was evident that the coagulation of blood had commenced in the arterial trunk, and had subsequently extended into the smaller branches, as the coagula in the latter were red and less firm; while, by their decolorization and tenacity, the clots in the larger branches presented unequivocal evidence of their ancient date. Upon dividing the clots*, a collection of purulent matter, which presented all the characters of phlegmonous pus, was found in the centre of the largest coagulum.

In a woman who died fifteen days after her accouchement, and who presented, during the latter days of her life, a train of typhoid symptoms, Cruveilhier found the primitive iliac vein and its divisions filled with adherent sanguine concretions, which presented various degrees of age. They were white in the principal trunks, where they contained pus in their interiors, and became red and gradually less coherent in the extreme divisions. The lower extremities did not present any marked traces of oedema. The liver was of a light yellow colour, softened, and otherwise diseased; the uterus was equally flabby, but without structural alteration. There was pleurisy of the posterior border of the right lung, with ordinary diffused and lobular pneumonia. The pleurisy was evidently consecutive. The lung, when divided, presented divisions of the *pulmonary artery* filled with fibrinous concretions. These deposits were white, and contained pus in their interiors: they divided and subdivided with the branches of the vessel, becoming red and scarcely coagulated in the smaller ramifications. The concretions did not exist in the small vessels in the near vicinity of the portions of lung which were affected with lobular pneumonia. In the part of the lung which was the seat of ordinary inflammation (diffused pneumonia), the tissue of the organ was infiltrated with pus, and was in the condition of grey hepatization. Cruveilhier found in this subject a very rare pathological alteration—a considerable and irregular shred of lung was isolated in the middle of this organ, and was not attached,

except by a very narrow pedicle formed by the air and blood-vessels. This portion of lung did not present in other respects any of the characters of gangrene.

Where fatal phlebitis occurs as the result of injuries and surgical operations, it is liable to be associated with all the lesions of the pulmonary tissues alluded to in the above histories: acute pulmonary oedema, purulent infiltration, lobular pneumonia, the characteristic form of circumscribed pneumonic abscess, and pleurisy, have frequently been observed in these cases. In a few instances the association of these lesions with inflammation of the pulmonary artery has been clearly displayed; but, as in the phlebitis which occasionally follows an operation, the patient usually sinks very rapidly under the prostrating severity of the disease, death may occur in these instances before the sensible evidences of inflammation of the vessel—such as the deposition of adherent coagula, &c.—have become established. It is also probable that, in many cases where the morbid appearances in the lung substance have been carefully noted, an extensively diseased state of the pulmonary artery has been entirely overlooked.

The following brief narrative, also by M. Cruveilhier, affords a good example of acute inflammation of the pulmonary artery occurring in association with a peculiar form of traumatic phlebitis.

In a man who died twenty-nine hours after amputation of the thigh, which had been rendered necessary by a recent injury, Cruveilhier found phlebitis of the medullary canal of the femur, capillary phlebitis, and apoplexy of the liver, and commencing phlebotic inflammation of the spleen. The lungs contained purulent cavities, which were principally situated at the base and posterior part of the right: they were generally small, and irregular in shape, projecting from the surface of the lung, and surrounded with a red and indurated areola. The superior lobe was entirely exempt. A section of this lung discovered some abscesses in its interior, and revealed a decolorized concretion, which filled and adhered to a secondary division of the *pulmonary artery*. In this, as well as in other cases which have occurred to him, Cruveilhier found that the veins of the stump, and of all the other parts of the body, although examined with great care in their trunks as well as in their smaller ramifications, did not present any change.*

* M. Baron considers that in cases of this description the train of lesions in the artery occurs in a manner the reverse of that described by Cruveilhier; he believes that the coagulation commences in the extremities of the arteries, and extends backwards to the larger branches: this may possibly sometimes occur, but in the generality of cases the appearances of the various portions of coagula favour the opinion of Cruveilhier. It seems that almost any part of the tract of inflamed vessel may be the first to receive a deposit of adherent coagulum. Such deposits are very liable to occur in the large branches; they then form a kind of nuclei, which, so soon as they become sufficiently prominent, are increased by further depositions both on their cardiac and distal extremities.

* This observation, although of great value as illustrating the now established principle that fatal results may be produced by inflammation of very minute veins, does not, of course, by any means apply to all cases. The most extensive inflammation of the large veins of the stump occasionally presents itself in persons who die with typhoid symptoms shortly after undergoing amputation.

It can scarcely, I think, be doubted for an instant, that, in the whole of the above cases, the patients were the subjects of acute inflammation of the pulmonary artery. In Cruveilhier's first case, the progress of the thoracic mischief which immediately led to dissolution occupied six days; and, although it is not improbable that a certain degree of insidious inflammation commenced in the pulmonary artery earlier in the disease, when the patient first complained of pleuritic pain on the 23d of July, the fatal attack of pneumonia and arteritis did not commence until nine days afterwards. It is clear that in M. Lediberder's patient, a deposition of fibrine must have taken place in some of the obstructed portions of the pulmonary artery previously to the occurrence of the fatal attack of dyspnoea. It is probable, however, that the vessel had remained tolerably free until a very short time previously to the woman's death. Cruveilhier's third case (an indisputable example of acute pulmonary arteritis) must be taken as evidence that decolourised clots may form in this vessel within twenty-six hours; and the character of the fatal attack which destroyed Lediberder's patient in an hour and a half, together with the recent character of the changes found in the pulmonary tissues after death, appear to me to prove almost incontestibly, that this woman was destroyed by the acute attack of pneumonia associated with active disease, superadded upon sub-acute inflammation, of the pulmonary artery. In the remaining example, (Cruveilhier's second case) the entire duration of the disease was only fifteen days, but no mention is made of the precise time at which the evidences of thoracic mischief were first presented.

It will be found, then, that, in certain cases of acute phlebitis, the patients fall into a typhoid condition almost immediately after the commencement of the venous inflammation, presenting the collapsed and death-stricken aspect of persons whose systems are mortally contaminated by an animal poison; here, where death occurs, as it occasionally does, within a few hours after the onset of the attack, pus may be discovered in the circulating blood, which is indisposed to coagulate; the principal viscera are found generally softened, and present partial traces of incipient inflammation of the lowest character, such as indistinct ecchymosis, mottling, and irregular vascularity; the lungs appear congested in that defined manner which indicates the earliest commencement of lobular pneumonia, or have various portions of their tissues, and perhaps their entire substance, infiltrated with serous or sero-purulent fluid. This latter condition is not to be confounded with the state which occasionally precedes hepatization in ordinary cases of pneumonia; it is

not the precursor of any second stage, but is a disease *esi generis*, and is essentially fatal in its character. In these cases, examination may fail to discover clear evidences of inflammation of the pulmonary artery; still this process may have commenced although the products of inflammation may not have had time to form. Where life is protracted for some hours longer, or when the patient continues to struggle on for a few days, the liver, spleen, and lungs are usually found to be the seats of circumscribed abscesses and purulent infiltrations, and these appearances, when occurring in the lungs, are generally associated with traces of pleuritis of the most asthenic character, principally affecting the surfaces of the lower lobes and diaphragm, and may also be attended with the evidences of acute inflammation of tracts of the pulmonary artery. When the whole, or the majority of these lesions occur in association with each other, the disease is always rapid in its progress, and is probably entirely beyond the aid of human science. It will be observed that inflammation of the vessels and substance of the lungs may be set up at any stage of the progress of low forms of phlebitis;—wherever the surface of a stump remains unadherent, and destitute of healthy discharge, and so long as the tract of an external vein, not previously the seat of varix, retains the slightest traces of inflammatory action, the danger of pulmonary arteritis and of secondary abscess of the principal viscera may be seriously apprehended.

In all such cases, attention to the renal and hepatic functions is most imperatively called for. Purulent infection is commonly regarded as an ultimate pathological condition, which may chance to occur in almost any case, and which is entirely beyond the influence of preventive means. A very long and practical investigation of the subject has, however, convinced me that (except in certain puerperal cases) the extremely low and unhealthy form of phlebitis which permits the entrance of purulent matter into the general circulation, never occurs, in this country, to any but those whose constitutional powers have long been impaired by various excesses or vicissitudes, and that it is then intimately associated with a more or less diseased condition of the principal secretory and deparative viscera. Under these circumstances, it may often be impossible to ward off the threatened attack, although its onset may be clearly anticipated, and our efforts will probably be as vainly employed to resist the rapid fatality of the disease when its progress has commenced: still, in the subjects of known or suspected renal and hepatic lesion, it always remains in our power to postpone surgical operations which are not demanded by immediate necessity; or, at least, where such delay is impossible, or

where injuries have been accidentally inflicted, we may still be prepared to employ measures to ward off the threatened evil, or to meet it at its earliest approach; and, however feeble our most cautious efforts may eventually prove in the accomplishment of these objects, it still remains with us to guard the patient against many circumstances that may seriously aggravate the peril of his condition. Where an individual, whose kidneys or liver have long been in a condition either of organic disease or of serious functional derangement, becomes the subject of an accidental injury or surgical operation, any circumstance which tends to produce increased vascular action in his impaired organs is fraught with the most imminent peril to his life. In one, especially, whose vital powers have recently been lowered by the shock of a capital operation, the passage of a draught of cold air over the surface of the body, or even the employment of any of those mild diuretic and chologogue medicines, which are usually prescribed in such cases, may prove the means of setting up at once a train of acute internal inflammations of the most rapid and uncontrollably destructive character.

I am fully convinced that, if surgeons would resolve to adopt previously to all operations, and in every case of injury and wound, even in those of the most apparently trivial description, the precautionary measure, which I ventured to urge very strongly some years ago,*—of carefully examining the condition of the liver and spleen, and more especially of the kidneys, the occurrence of many of those formidable inflammations of the solid viscera and of various serous and vascular structures which so often follow external wounds, might be entirely averted.

[To be continued.]

ON
MORBID SYMPATHIES;
OR THOSE ASSOCIATED STATES OF DIS-
ORDER WHICH MOST FREQUENTLY
PRESENT THEMSELVES TO
THE PHYSICIAN.

*Being the Croonian Lectures delivered at
the Royal College of Physicians in
March and April, 1846.*

BY JAMES COPLAND, M.D. F.R.S. &c.

[Continued from p. 794.]

In my last lecture I directed your attention more especially to the influence of the circulating fluids—not only of the blood, but even of the lymph and

chyle—in associating together morbid states of different and distant organs. I offered some observations on the composition of the blood, its various conditions in disease, and the changes that take place in it, and in the vascular system in general, during malignant distempers.

I stated the results of experiments shewing these changes, insisted upon the very great importance of attending particularly to the physical appearances of the blood when removed from the vessels, and urged the greater importance of these appearances, practically speaking, to the physician, than its chemical composition, even when this composition could be accurately ascertained,—an object rarely to be attained.

I mentioned that the influences affecting the circulating fluids might be classed under four heads: *first*, that of the nervous systems, more especially the organic nervous influence; *secondly*, the state of the chyle resulting from the nature of the ingesta; *thirdly*, the absorption of morbid matters into the circulation, from any surface, organ, or part; *fourthly*, interrupted excretion. Important and extensive changes are produced on the blood by the several eliminating organs—the liver, the digestive mucous canal, the respiratory surface, especially the lungs, the skin, and the kidneys. An interruption to either or several of the functions of these organs, more or less disorders the state of the circulating fluids. You are well aware that, in many cases, particularly when the constitutional powers are not materially affected or depressed, interruption to the discharge of one secreting function is very frequently followed by vicariously increased action of another excreting function, and thus the system is preserved without experiencing much detriment, in most cases of such interruption.

The importance of considering the state of the blood was shown to be remarkably great, particularly with reference to fevers. In the different forms of fever, where the disorders of function, and ultimately organic changes in the organs themselves, become the most extensive, it is seldom that we find one organ implicated alone, but several in rapid succession, or contemporaneously. Inflammatory lesion of a particular tissue or organ, with which

* Guy's Hospital Reports, New Series, vol. 1.
"Observations on certain of the Causes of Death after Operations and Injuries in London Hospitals, with a view to their prevention."

the system sympathises through the channels I pointed out, namely, nervous organic influence, the blood, continuity and contiguity of surface or structure, implicates the whole frame. The functions of the most remote organs become affected thereby, and generally, in proportion to the extent to which the circulating fluids are disordered. If vascular action, and especially if the circulating fluids be materially affected, co-ordinate disorder of the urinary and digestive organs, and also of the functions of the brain, generally ensues.

Owing to the bonds of connection which unite the frame into one whole, and intimately associate all the viscera, it has been supposed that all fevers are merely the general or sympathetic disturbance of this whole—of this macrocosm—owing to a more or less prominent affection of one organ. Several writers have attempted thus to localise all forms of fever; and to consider them merely as modifications of inflammatory fever; but I need not do more than allude to these attempts.

It would be interesting, if time allowed, to trace the manner in which the different systems of the frame become affected during the progress of various fevers. There is a certain class, for instance, that has been called periodic fevers; others, typhoid fevers; and others, pestilential or malignant fevers. Fevers have been variously classed; indeed they admit of a variety of classifications. With respect to periodic fevers, or those that arise from malaria, it may be remarked, that the morbid influence producing them seems to implicate especially the organic nervous system. There are various reasons for believing that this system is primarily affected, and that the fluids and abdominal viscera become more or less disordered secondarily. These reasons appear to be, first, the long period of incubation in many of the periodic fevers. Intermittent fever may not appear until many weeks after the individual has been exposed to malaria, and then the paroxysms occur at intervals. We know that morbid impressions, or irritations, or other morbid conditions affecting nervous parts, usually assume a periodic character. If it were the blood which is affected in these cases, we might infer that that state of the blood which existed during

the paroxysm would most likely continue without intermission until removed: and that, instead of an interval, when comparatively little disorder is felt, the disease would be continued; for we observe that, in proportion as the blood becomes affected in fever, so does the disease assume a more and more continued type. There are various lesions prominently affecting particular organs, and which give fevers variety of character: thus we have gastric fever, bilious fever, and so on.

If we proceed to the consideration of the worst forms of fever, for instance, typhus, or pestilential fever, not only is the nervous system affected—the organic nervous system being probably the first to be impressed with the cause of the disease—but also the blood itself soon becomes more or less disordered—becomes physically changed.

Now the question is, whether this change produced so early in the blood in typhoid and pestilential fevers arises primarily from the absorption of the cause into the blood, or whether it arises from the morbid impression made on the organic nervous system, owing to which impression the excreting or depurating functions, which are under the influence of this system, are impaired or arrested, and the circulating vessels and fluids become affected, and ultimately changed? I pointed out to you how copiously the vascular system is supplied by the organic or ganglionic system; and hence we may expect, *a priori*, that causes affecting this system will, to a co-ordinate extent, affect the vascular system and the fluids in the vessels. We find that, in the progress of fevers, the blood becomes changed; and the change may arise partly from the impression made by the emanations causing the fever, upon the organic nervous system, and partly from the absorption of the emanation—of the morbid poison—into the circulating mass. I believe that the morbid effluvium, being received into the lungs with the air, injuriously affects their organic nervous system supplying these organs: hence the blood in the lungs is not sufficiently changed. Possibly partial absorption of this effluvium may take place into the blood itself; but if it does not, there is a still stronger reason to infer that the morbid impression extends throughout the organic nervous system, impairing the influence of it

upon the vascular system, and in the secreting and excreting viscera. The organic nervous power being depressed, it naturally follows that the organs supplied by this system will be impaired in function; and hence we find that, in the first days, or within the first twenty-four hours of fever, the functions of the excreting organs are very remarkably diminished, or even suppressed; and the consequence is, that the blood, which may have been hitherto unaffected, becomes changed; or, if it have been already affected by the cause of the disease, or by the impression on the ganglial system, becomes still further changed. Thus the one change reacts on the other, and promotes it, until at last the changes in the organic or vital nervous influence, and in the vascular system and circulating fluids, become so great, that the blood is not only altered sensibly as it respects both its physical characters and its chemical qualities, but the tissues and organs themselves become more and more disorganized, or evince a remarkable loss of their natural vital cohesion, especially in distempers of a malignant character.

These are subjects which would require considerable illustration; but, in pursuance of my plan, I must go on to other topics, and refer you to what I have stated corroborative of these views in a recent work.

I have already adverted to the influence of obstructed circulation through the heart itself, independently of any material change in the constitution of the blood: this is one of the most important sources of complicated disease. I have before pointed out the intimate connection that exists between the circulation through the heart and that through the lungs; but so much have we been in the habit, in consequence of the modes of teaching and writing generally adopted, of viewing disease nosologically, and of regarding one species as being altogether distinct from another, and so injuriously has this acted in the practice of medicine, that we have thereby been actually prevented from seeing the connection between different diseases, and how intimately they are associated, and how readily the disorder of one organ induces or passes into that of another, until experience and repeated observation have destroyed the injurious im-

pressions of erroneous education and false precepts.

We have all been accustomed to observe a short hurried state of respiration on the least exertion; and this has often been considered as a form of asthma, and the disease has been looked for in the lungs themselves, or the respiratory passages. The patient has been said to have spasm of the bronchi or the trachea, or some disorder of the respiratory passages, which has produced this disordered respiration. But now that we have traced more intimately the relation of the disorder of one organ to another, we have found that in these cases the lungs may be free from disease, further than congestion arising from interruption to the circulation through the heart; and we have discovered that, in the majority of such cases, the lungs are only secondarily affected, and that the heart is primarily in fault. This condition of the respiration is most frequently owing to this cause, even where there is but slight disease in the heart. Thus in weakened, nervous, and susceptible persons, the affection of either organ soon extends to the other. If the lungs are disordered, the heart becomes affected; or if the heart is primarily affected, the lungs become disordered—the least excitement of one organ extends to the other. In many persons of lax fibre, or of a lymphatic or leucophlegmatic constitution, the parietes of the heart are deficient in tone, and slight dilatation in these cases often takes place, so as to give rise to imperfect circulation and congestion, with or without effusion in the vicinity of the congested viscera; the subordinate circulating apparatuses, or the subordinate orders of the vascular system, namely, the vascular apparatuses of the liver, brain, and lungs, especially suffering derangement. Numerous instances present themselves in practice of consecutive affections, of complicated character as the disease advances, during hooping-cough, dry catarrh, asthma, &c.; the heart, the brain and spinal cord, and their membranes, the portal circulation, &c. becoming secondarily affected; in addition to organic changes often also produced in the lungs themselves, and in their investing membranes.

The connection subsisting between dilatations, often slight, of one or more

of the cavities of the heart, and between lesions of the valves and orifices and congestions of the subordinate orders of the vascular system just specified, more especially those of the lungs and brain, is sufficiently obvious, particularly when the heart betrays any of these lesions. But there is every reason to infer that congestions of the lungs may actually take place to even a fatal extent, without any very obvious organic lesion of the heart, or lesion of such an extent as can account for the occurrence. Thus severe shocks to the nervous system, severe injuries of vital parts, and agents acting with great intensity, and either inordinately depressing or exhausting vital power, occasion remarkable congestion of the lungs, sometimes also of the other subordinate orders of the vascular system, and generally also with a dilated or relaxed state of the parietes of the heart's cavities. Congestion of the lungs, however induced, even in slighter grades, is a serious morbid condition, inasmuch as it arises from, or is connected with, various other lesions, either of vital action or of structural change, especially of the parts now stated; and as it generally leads on to further alterations, to inflammatory action, to hæmorrhages, and various organic lesions, especially when neglected or improperly treated.

The sympathies between states of the circulation and vascular action, and those of the digestive organs, are so obvious, as hardly to deserve notice. The functions of digestion and assimilation languish when those of circulation and respiration are impaired; and when the respiratory, and especially the circulating actions, are morbidly excited, distaste of food, nausea, thirst, and costiveness, are common consequences. In these circumstances the digestive villous surfaces become injected or congested, and the vascular disorder is often imputed to, instead of being viewed as causing, this change. Wherefore, it may be asked, are these surfaces often so prominently affected in cases of general vascular excitement? Because the vascular excitement does not always extend to the portal circulation; and the return of blood from the related viscera through the portal and hepatic veins, is not so rapid and complete as the circulation through the arteries supplying the di-

gestive canal: hence the congestion in many acute and chronic diseases of the digestive villous surface, and the rapid disorganization often consequent upon it, especially when organic nervous power is depressed, as in malignant or pestilential fevers, and in gastric remittents.

The liver also often experiences consequent congestion or other disorder when the general circulation is either much accelerated, as above; or much impeded, as in cases of cardiac or pulmonary disease. The frequent occurrence of congestion of the liver in the course of these and other maladies, especially of those affecting the organic nervous influence, is a matter deserving notice. This congestion may be in a great measure owing to the circumstance of the circulation through the portal vessels being almost entirely removed from the influence of the heart. The circulation through these vessels appears to be owing to the organic nerves which supply them. I believe that the capsule of Glisson is also very influential in promoting this circulation; and this capsule is abundantly supplied with soft ganglionic nerves, whereby the vital action of the portal vessels is reinforced with nervous energy.

In all cases where there is cardiac disease, and congestion of the lungs consequent upon it, there is generally congestion of the liver. Both organs are intimately associated by means not only of the vascular system and the circulating fluids, but also of organic nervous energy, both organs being supplied by the same class of nerves. Again, the circulation through the liver, to which I have already partially adverted, is very much influenced by the state of the fluids and matters absorbed into the circulation even from the stomach itself, but principally from the intestinal canal. Stimulating, irritating, or imperfectly assimilated matters, when carried into the portal circulation, must necessarily irritate or excite the liver, and thereby ultimately produce changes of its structure.

The sympathy existing between different states of the respiration and of cardiac circulation and the brain need only be mentioned to be admitted. The effect of disordered circulation through the heart upon the brain is a matter of very great importance, and

one which, until the last thirty years, has not been sufficiently adverted to. The subject, however, was well discussed twenty-five years ago, when it was shewn that a number of cases of congestive apoplexy, of hæmorrhagic apoplexy, and of palsy, are occasioned by interruption to the return of blood from the head, owing to lesions of the parietes of the heart's cavities, or of the valves and orifices of the heart; with or without congestion of the lungs, according to the side of the heart in which the primary lesions are seated. This is a complication of very great importance, inasmuch as you may have patients with many symptoms which are usually referred to disease of the brain, and are often considered premonitory of apoplexy or palsy, and the disease may be treated as such without reference to the state of the heart, the pulse being tolerably regular; and yet, on examining the heart by auscultation, you find serious disease of this organ. I have had many patients who have long complained of symptoms referable entirely to the brain; the heart betraying to them not the least disorder, and yet in this organ was seated the primary, and often the most extensive disease.

Owing to insufficiency of the valve, or to dilatation of the right auriculo-ventricular orifice, or to what is a still more rare occurrence, to disease of the valves at the commencement of the pulmonary artery, occasioning obstructed circulation, there is regurgitation of blood from the ventricle into the auricle, and then a series of changes supervene, as respects the circulation not only in the brain, but also in the liver and kidneys. At first, lesion of the functions of these organs, or of one of them in a more prominent manner, is observed, with more or less remarkable congestion; and subsequently structural change, with either serous or sanguineous effusion, anasarca, hæmorrhages, &c. The blood being partly thrown back at each contraction of the ventricle into the auricle, the regurgitation into the vena cava superior and inferior occasions congestion of the brain, liver, and kidneys, and its consequences, as just assigned. When there is dilatation of the right auriculo-ventricular orifice, or insufficiency of the valve, the effect upon the venous circulation is made manifest in

the pulsation of the jugular veins, and the consecutive lesions just mentioned soon supervene.

I have observed these associated changes in the cases of three eminent medical men who were under my care, and in two of whom I had an opportunity of making a post-mortem examination. When lesion occurs on the left side of the heart, and which situation is much the most frequent, it interrupts the circulation through the lungs: congestion of the lungs takes place, and, in consequence of it, I have seen the changes supervene that I have now mentioned with reference to the right side of the heart. The congestion is usually to a great extent, and there is either effusion into the pleural cavities, or hæmorrhage of the lungs, or pulmonary apoplexy. There are other associated changes which require merely to be mentioned—namely, organic diseases of the heart and kidneys. We know that granular degenerations of the kidneys, Bright's disease, are often intimately connected with, and consecutive upon, interrupted circulation through the heart. The blood being impeded in its return from the kidneys, it produces in them congestion, and ultimately serious disorganization. Consecutive disease occurs also in the liver and other parts.

I have already adverted to the association of disordered function of the vascular, muscular, and nervous systems. I need only further notice the subject by stating, that, when the blood is disordered, not only are these systems affected, but, through the medium of the nervous system, muscular motion is more or less impaired, and the different glandular organs are implicated. When the lacteals are irritated, especially those that arise from the small intestines, that irritation is propagated to the mesenteric glands and the liver. Indeed, you seldom have the digestive mucous membrane affected, especially in children, without having disease of the mesenteric glands, particularly if the malady goes on to ulceration. It has been believed, that not only under these latter circumstances, but also in chronic dysentery, more especially as it occurs in warm climates, the consecutive abscess of the liver frequently met with is not merely owing to the absorption of morbid matters, purulent or acrid,

from the digestive mucous canal, which irritate or inflame the liver or its vessels, but is actually the result of a true phlebitis, commencing in the veins of the mucous surface, and propagated along the veins contributing to the portal system, and thence to the ramifications of the vena portæ. You are also aware, that, in disordered states of the blood, when this fluid becomes vitiated, not only the muscular system, but the joints also are affected. I have already hinted at this connection, as arising from the circumstance of the ganglial nerves supplying not merely the blood-vessels of the extremities, but also being distributed to the joint. When they approach the joint, they form small ganglia: and hence, when the organic nervous system is much depressed or weakened, there is weakness of the joint. In this way you may explain various phenomena that occur in many diseases. Thus, gout and rheumatism arise not merely from the morbid condition of the blood, but also from the state of the organic or ganglial nerves supplying those parts, and the connexion of these nerves with the cerebro-spinal sensory nerves.

[To be continued.]

MEETINGS OF MEDICAL SOCIETIES APPOINTED FOR THE ENSUING WEEK.

Westminster	Sat. Nov. 13, 8 P.M.
Pathological	Mon. " 15, 8 "
Medical	" " " 8 "
Hunterian	Wed. " 17, 8 "

A PUZZLING QUESTION ON GESTATION.

IN the evidence given before the House of Lords, in the Gardner Peerage case, in 1825, one of the medical witnesses advanced the idea that pregnancy continued longer with male than with female children, assigning 280 days for the latter, and 290 for the former. "But," said the Solicitor General, "suppose the child is an *Aermaphrodite*—what then is the time?" The witness replied, "*I should take between the two.*" This was a better way of answering the question, than of solving the difficulty.

EMBALMING WITH ARSENIC.

THE French Minister of Justice has just addressed a circular to the law officers of the Crown, announcing to them that the use of arsenic in embalming dead bodies, is for the future prohibited.

MEDICAL GAZETTE.

FRIDAY, NOV. 12, 1847.

WE insert this week two memorials from different parts of the kingdom, indicating the philanthropic anxiety of medical practitioners to aid in carrying out measures which may improve the health of Towns. The one is addressed to Sir George Grey, and the other to the Mayor of Gloucester. The perusal of these memorials satisfies us that the Act, passed in August 1846, for the removal of nuisances and the prevention of contagious and epidemic diseases,* is not sufficiently stringent in its provisions; and that if it did not expire at the end of the next session of Parliament, it would be absolutely necessary to pass another act to amend and explain it.

In conformity with the general practice, not one of the clauses refers to the remuneration of medical practitioners for the services which they render the public by searching out sources of filth, and certifying to their noxious tendency on the health of a neighbourhood. It is considered, by Parliament, that their philanthropic efforts are sufficiently remunerated by the good results which proceed from them; and that, as in their attendance upon the poor, or as medical officers in fever-districts, the consideration that they are performing a work of charity will be an ample reward for professional exertions,—the end of which is the benefit of their fellow-creatures.

It is highly creditable to the profession, that they have not allowed this mean system of economy on the part of the Government, to interfere with their exertions for the suppres-

* 9 and 10 Victoria, Cap. xcvi. 28th August, 1846.

sion of nuisances. The cause of humanity and charity has triumphed; and while the State has benefited, to a certain extent, by the working of the Act, the Government has the great satisfaction of knowing that it has made use of the services of the underpaid members of a respectable profession without having added any charge to the public expenditure! So far as the present temporary measure is concerned, the matter is of little importance; but we must take leave to remind those in authority, that any future sanitary act which is not based upon more liberal principles, will speedily fail in its objects. Health-commissioners to act gratuitously, or to be paid at the fever-rate of five-shillings a day, will not easily be found. Incompetent men may, it is true, by the adoption of the tender-system, be induced to accept the office: but this will soon show itself to be dearly-purchased economy. Sanitary measures cannot be carried out without knowledge and skill in the medical officers of health; and the want of these qualifications will soon be apparent in the inefficacy of the results. Errors committed by the occupiers of these offices, will endanger the health of large sections of the community, and they cannot fail to be brought prominently before the public; hence, then, only one of two courses will be open to the Government, i. e. either to abandon sanitary measures altogether, or to allow a proper remuneration for the services rendered. If the working of sanitary acts depended on lawyers instead of medical men, we do not believe that any difficulty in relation to the latter point would ever arise; for the members of that disinterested profession have long since come to the resolution of not working for the public, except on the payment of an adequate salary.

The object of these remarks, however, is not so much to show that Government must not reckon upon being served gratuitously by the medical profession in future sanitary legislation, as to prove that in spite of the willingness of medical men to aid the executive, the beneficial operation of the act of 1846, is, in some parts of England, completely neutralised. The Tynemouth Memorial indicates either a great defect in the statute, or that its provisions may be violated with impunity. While the preamble states, that two medical men may give a certificate setting forth the existence of a nuisance, and that the same is likely to be prejudicial to the health of a neighbourhood; it simply directs that *it shall be lawful for any Town Council Commissioners, &c., &c., or in case there shall be no such Town Council, Commissioners, &c., for the guardians of the poor to lay a complaint before any two justices who shall be empowered to enforce the abatement of the nuisance, and, if necessary, at the expense of the owner of the property.* This appears all very simple, but take the Tynemouth case—where we have, with fever prevailing in the borough, and the prospect of a near approach of Asiatic cholera, “open dunghills, accumulations of offal and other noxious and offensive substances,” concerning the necessity and propriety of removing which without delay, there cannot be any reasonable doubt,—and the Contagious and Epidemic Disease Prevention Act becomes a Parliamentary nullity. The *option* of suppressing nuisances is given to Town Councils, Commissioners, &c.; for the words of the statute are permissive, and not imperative. Thus, supposing that the Commissioners belong to the Anti-Health of Towns party, and decline interfering, there is no penalty imposed by the statute; and it

cannot be expected that, besides giving their professional services gratuitously, medical practitioners are to move the Court of Queen's Bench to compel Town Councils, &c., to the performance of a public duty. But the Tynemouth case goes beyond this: the borough happens to be unfortunately blessed with Commissioners under the North Shields Improvement Act; and the memorial informs us that "they are too large a body, and their meetings are too remote to effect any good." The nature of the complaint satisfactorily shows that improvements in the shape of removing disgusting nuisances do not fall within the views of the Commissioners; and, when we turn to the statute of 1846, we find that the guardians of the poor can only act upon the medical certificate "in case there shall be no such Town Council or other like body, or no such Trustees or Commissioners, &c. &c." So that here we have a complete obstruction to the clauses of what was intended to be a useful piece of legislation, owing, as it appears, to a stupid blunder in the framer of the statute, in his not giving power to the Guardians of the Poor to take proceedings on the medical certificate, when, from ignorance, incompetency, or other causes, Town Councils and Commissioners refuse to interfere. Then, it seems, the Act requires that the complaint should be made before two justices, when it appears by the memorial that there is only *one* residing within the borough. It is, however, stated in the preamble that *any* two justices may determine upon the complaint; so that, if the above-mentioned cause of obstruction did not exist, there might be a chance of a densely populated borough, already in an unhealthy condition, getting rid of its dunghills, accumulations of offal, and other nuisances, which always add to the diffusion and mortality of fever.

We trust that the Minister to whom this memorial is addressed, will immediately take measures to suppress the nuisances complained of; and that in introducing another sanitary bill to the Legislature, he will take care that its objects are not defeated by the dread of clashing jurisdictions. If trustees and commissioners will not act, let power be given to the Guardians of the Poor: if they decline the task, let it be competent for two respectable householders to be the complainants on a medical certificate; and let one magistrate, under a power of appeal, if the nuisance were not of a pressing or dangerous nature, decide upon the reasonableness of the complaint, and make the necessary order for its removal.

What difference exists between the conduct of the Commissioners who allow a dangerous measure to continue when the law confers on them power to suppress it, and that of a defendant who refuses to obey the order of magistrates for its removal? Equitably speaking, none:—the spirit of the act is as much violated, and the health of the community as much endangered, in the one case as in the other; but *legally* speaking, the difference is great; the Commissioners are freed from all responsibility for the result, while the defendant, who wilfully neglects the order, or obstructs its lawful execution, is liable to a penalty of five pounds, and to the payment of all the expenses incurred by its removal!

MEDICAL APPOINTMENT.

On Thursday, the 28th October, Dr. William Budd was unanimously elected Physician to the Bristol Infirmary, in the room of Dr. Riley, who has resigned.

ROYAL COLLEGE OF SURGEONS.

GENTLEMEN admitted Members on Friday, Nov. 5th.—T. H. Wardlaw—G. C. Hyde—H. J. Hinckman—A. J. Payne—R. Jones—C. A. Dalgleish—P. Jones—G. C. Phillips.

Reviews.

Adulterations of various Substances used in Medicine and the Arts, with the means of Detecting them: intended as a Manual for the Physician, the Apothecary, and the Artisan. By LEWIS C. BECK, M.D. Professor of Chemistry in Rutgers College, New Jersey, &c. 8vo. pp. 333. New York: Samuel and William Wood. 1846.

THE work before us supplies, in a very satisfactory manner, a deficiency which has hitherto existed in our pharmaceutical literature. Sufficient attention has never yet been paid to the detection and exposure of that most inhuman species of fraud which aims at the deterioration, for the sake of gain, of those agents which have been mercifully granted to man by Divine Providence, for the purpose of alleviating the disease and suffering to which his frail corporeal system is continually liable throughout the brief period of its mundane existence. There is probably no crime more characterised by the worst features of rapacity and inhumanity than that of the wretches who strive to snatch from their suffering fellow-creatures, the only means by which the progress of physical anguish and decay may be averted, until the expiration of that fleeting term to which the lives of our degenerated race are limited; and it has always been a matter for observation that, although a general knowledge of the sciences of chemistry and botany would enable the medical practitioner or the druggist to detect many of the most usual adulterations of our medicinal preparations, no work could be found in the English language that embodied the whole of the information which it is necessary that every purchaser and compounder of medicines should possess for the purpose of detecting the frauds which are continually practised by the vendors of damaged and spurious drugs. This defect appears to us to have been very satisfactorily supplied by Dr. Beck, in the treatise now under review. The author has succeeded in exhibiting the principal adulterations of the various articles of the materia medica which

are susceptible of being fraudulently tampered with, and has also given clear accounts of the means by which the impurity of the medicines may be detected. A large proportion of the facts and directions contained in Dr. Beck's work are fairly assigned to other authorities; still the plan of his compilation is good, and many of its details are by no means deficient in originality. The various articles are arranged alphabetically, and a copious index is also appended.

The following extract affords a fair specimen of the nature of the information contained in this volume.

"*Senna*.—Under this name is" [are?] "included the leaves of several species of cassia, as *C. obovata*, *Colladen*; *C. acutifolia*, *Delile*; *C. elongata*, *Lemaire*; and *C. Æthiopica*, *Guibourt*, natives of the North of Africa, particularly Egypt, of Arabia, and of the Indian Peninsula. They are also cultivated in the South of Europe, and in some of the West Indian Islands.

"Of the varieties of senna known in commerce, those which are the most common are the Alexandrian, the Tripoli, and the East Indian.

"*Alexandrian senna*, the produce of Nubia and Upper Egypt, is brought from the port whose name it bears in large bales or barrels. It consists principally of the leaflets of the *C. acutifolia* and *C. obovata*, mixed with the leaves, flowers, and fruit of the Argel, *Cynanchum oleaefolium*, *Nectoux*, and of the *Tephrosia Apollinea*, *Sprengel*. This senna has a greyish-green colour, an odour which resembles that of tea, and a viscid taste. The leaflets are much broken.

"*Tripoli senna* scarcely differs from the preceding. The leaflets are perhaps more broken, smaller, thinner, of a greener colour, and of a less herbaceous odour. It seldom contains either *Cynanchum* or *Tephrosia* leaflets.

"*East Indian Senna*.—This occurs in large unbroken leaflets, from one to two inches long, and half an inch broad, thin and flexible, and of a fine green colour. Many of the leaflets, however, have a dark-brown or blackish colour, probably from an imperfection in drying, and its odour and taste are similar to the Alexandrian senna.

"*Alexandrian senna*, as before observed, is mixed with leaves of the Argel and of the *Tephrosia*. The former of these are readily distinguished by their pale-yellow colour, and thin coriaceous texture, their under surface being reticulated with veins, their upper surface being somewhat rugose, and by their being equal-sided; the leaflets of all the true sennas being unequal at the base. *Tephrosia* leaflets are easily known by their

silky surface, and by the lateral veins proceeding parallel to each other to the very edge of the leaf, without ramifying, (*Neligen*). Burnett remarks, that the practice of mixing the argel with the senna has been carried to such an extent as to persuade Nectoux that the real cathartic drug is argel, which the Alexandrian merchants adulterate with senna, in order to meet the demands of Europe, which always exceed, by a third or more, the annual crop. Rouillure, however, states that the traders at Cairo mix two parts of argel with three of the obovate, and five of the acute-leaved senna. The discrimination of these mixtures is a matter of consequence, as the argel is said to produce irritation of the bowels and protracted nausea.

"In Europe there are said to be two other adulterations, which are not met with here. One is with the leaflets of *Colutea arborescens*, L., or bladder senna, which may be readily distinguished by their regularity at the base. The other is with the leaflets of the *Coriaria myrtifolia*, &c., a poisonous plant growing in Southern Europe. It is said that, in France, accidents have happened from the administration of senna thus adulterated; and Mr. Lee states that, when he visited the drug warehouse of Lisle, Turcoing, Menin, and their vicinities, in 1828, he found this adulteration almost universally practised. The fraud can be detected by an inspection of the leaves. Those of the *C. myrtifolia* are ovate, lanceolate, acute, greyish-green, with a bluish tinge—three-nerved, with a strongly marked midrib. Chemically, they are characterised by forming an abundant blue precipitate with sulphate of iron, and by giving precipitates with bichloride of mercury, tartar emetic, and chloride of barium."—(pp. 201-2.)

We can confidently recommend this work as a very important aid to the purchasers and compounders of drugs. We should be glad to hear that the principal wholesale druggists in Europe had entered into a combination to detect and punish the destructive frauds of those who gain a detestable profit by the adulteration of medicinal agents; but we fear that neither the exertions of individual members of the profession nor the imperfect surveillance of our corporate bodies will ever prove the means of wholly putting down this ancient and flagrant atrocity. The establishment of stringent legislative measures can alone be equal to the task; and we trust that many more years will not be allowed to elapse before the condition of all drugs

imported to, and sold in, the country is made a matter of the strictest investigation.

Proceedings of Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Monday, November 1st, 1847.

DR. WILLIAMS in the Chair.

MR. PRESCOTT HEWETT brought forward—

Three cases of ulceration of the Duodenum in burns, illustrated by a specimen.

CASE I.—S. C. æt. 66, was admitted into St. George's Hospital, on the 19th of March, 1844, under the care of Mr. Hawkins, on account of a burn occupying the neck, back part of the trunk, and both arms, as well as the back part of the right leg. On the leg, the skin was slightly affected, but, in the other parts, it was extensively destroyed; the accident had occurred whilst the patient was lighting a fire. The usual dressings were applied, large sloughs subsequently made their appearance in various parts, and she fell into a low typhoid state; she lived seventeen days after the accident, no abdominal symptom ever having manifested itself.

At the examination of the body, 34 hours after death, the mucous membrane of the stomach was healthy, but that of the first part of the duodenum presented two ulcers which had extended to the muscular coat, the fibres of which were laid bare. The larger of these two ulcers, situated within a quarter of an inch of the pylorus, measured about an inch and a half in length, and half an inch in breadth; the smaller one, of the size and shape of a French bean, was situated a little lower down: in the larger one the margins were sharp and irregular, in the smaller they were bevelled off and smooth. There was no increased vascularity in their neighbourhood, but the duodenal glands were remarkably large and numerous. The other parts of the intestinal canal were healthy. In the chest a few shreds of recently effused lymph were found in the right pleura, but the lungs and heart were healthy.

CASE II.—L. T., æt. 6, was admitted into St. George's Hospital on the 13th of Dec. 1844, under the care of Mr. Keate, with an extensive burn, occupying the lower part of the face, the fore part of the neck and chest, and various parts of both upper extremities. In the face the cuticle only was destroyed, but in the neck the deeper parts were affected, and over the

chest and arms the burns were of various degrees. The usual dressings were applied, and the little patient appeared to be going on favourably for a few days, when the burns about the arms and neck began to slough; this was soon afterwards followed by collapse, from which she, however, soon rallied under the influence of stimulants. At the separation of the sloughs, two or three rings of the trachea became exposed: collapse and difficulty of breathing shortly afterwards supervened, and on the 25th of the month she had a sharp attack of diarrhoea, which was soon checked by chalk mixture, but it returned again on the following day, when it was again checked. From this time she gradually sank, and died on the 2d of January, never having complained of pain about the abdomen, nor passed any blood in her motions.

At the examination of the body, 22 hours after death, an ulcer, of the size of a four-penny piece, was found in the first part of the duodenum. This ulcer, which was deep and excavated, presented smooth and regular margins; the mucous and muscular coats were destroyed, and the peritoneal coat, the only one remaining, was firmly adherent to the pancreas by which it was supported. There was neither discoloration nor increased vascularity in the neighbourhood, and the duodenal glands presented nothing remarkable. The other parts of the intestinal canal were healthy. Several patches of lobular pneumonia were found in the lungs, and two ulcers, with irregular margins, on the choroid vesicles. No other morbid appearance was observed.

CASE III.—A little girl, *æt.* 6, was admitted into St. George's Hospital, on the 4th of February, 1846, under the care of Mr. Keate, with a severe burn, which occupied the neck and chest, the upper part of the back, the left shoulder, and upper arm. For the first few days she had febrile symptoms, but they soon subsided, and from this time to the 2d of April she continued to do well; at this period she became irritable, the wounds began to slough, and she had profuse perspirations. On the 17th she vomited several times, but there was no pain about the belly, neither was there any blood in the stools; she continued much in the same state until the 20th, when she died.

At the examination of the body, three ulcers were found in the first part of the duodenum; the largest, about the size of a four-penny piece, within half an inch of the pylorus, the other two being close to the first. The two largest had extended down to the muscular coat, the fibres of which were laid bare, but the third was small and superficial, merely a slight depression on the surface of the mucous membrane, which in their neighbourhood

presented some traces of increased vascularity; the duodenal glands were somewhat increased in size. Both kidneys were much larger than natural, both presented well-marked specimens of the mottling degeneration, and, when examined under the microscope, the tubuli were observed to be large, and gorged with oil globules. The membranes of the brain were somewhat opaque, and a quantity of fluid was found both in the sub-arachnoid tissues and in the cavities of the ventricles which were dilated. The other viscera were quite healthy.

In reference to the frequency of ulceration of the duodenum in burns, Mr. P. Hewett mentioned, that out of seventeen cases of burn, which had been examined at St. George's in the years 1844, 1846, and first nine months of 1846, three cases, those just brought forward, presented ulceration of the duodenum; three presented increased vascularity about the duodenum, which was not observed in any other part of the intestines; the patients lived seven, eight, and seventeen days after the accident. Three, who lived upwards of three weeks after the accident, presented no morbid appearance whatsoever about the intestinal canal; and in the remaining eight, who lived but a short time after the accident, the principal morbid appearance was a slight affection of the respiratory passages.

Mr. Crisp exhibited a specimen of
Polypus of the uterus.

A lady, *æt.* 37, married, without children, came under Mr. Crisp's care on March 25th, 1847. She had been attended by him at intervals for several years, during which time she had not been confined to her bed; she has suffered generally from deranged liver and stomach; her complexion is of a dirty yellow colour—this is attributable to her eating dry chocolate (about 1lb. per week).

About 18 months since she had discharges of blood from the vagina, and these have continued at intervals up to the present time; the hemorrhage is now very profuse, and frequently escapes in gushes. A vaginal examination was urged, but this she would not submit to until the 25th of July, when the os was found very thin, and dilated to the size of a half-crown-piece; a soft tumor filled the uterus, but its attachment at this time could not be ascertained. The os gradually dilated, and the tumor protruded partly into the vagina, its attachment not being distinctly felt.

On the 10th of September, by means of the double canula, a whipcord ligature was applied to the base of the polypus. The patient at this time was in a very emaciated condition; the countenance anxious, pulse quick, with great exhaustion. It was con-

sidered, however, although the ligature would not in all probability be successful, that it afforded the only chance of saving life. The patient gradually became weaker, and sunk seven days after the operation, apparently from exhaustion. No hemorrhage took place after the application of the ligature, but there was a profuse discharge from the vagina of an offensive mucus-purulent fluid, and the bowels were much relaxed: injections of chloride of lime were used, and stimulants, with a nutritious diet, administered.

On a post-mortem examination, the polypus was found attached to the fundus of the uterus, the attachment being about six inches in circumference; the tumor was about the size of a large fist, pyramidal in shape, soft, and of a fibro-cellular structure. The ligature was applied a little below its attachment, and in all probability, had the patient lived, would have detached the tumor after a few days. Nothing remarkable was observed about the abdominal viscera, with the exception of few stones in the gall-bladder.

Dr. LEVER exhibited a specimen of

Polypus of the uterus,

the particulars of which are given in the last number of the *Guy's Hospital Reports*.

Dr. RAMSBOOTHAM exhibited a specimen of

Hypertrophied Placenta,

which weighed, together with the funis and membranes, forty ounces: the ordinary weight being from twenty to twenty-four. It presented no appearance of disease. It was softer than ordinary, the lobes being more easily separable the one from the other: the cellular structure also entering into its composition being looser. The microscope detected nothing abnormal. It was taken from a lady, æt. 31, of delicate habit, and leuco-phlegmatic temperament, who had borne eight children, one yearly; the first being at full time, and now living, —the six succeeding having all perished at $7\frac{1}{2}$ or 8 months of gestation, being retained in utero different periods, varying from three to five weeks, and expelled putrid.

About the period of quickening till after her confinement, she invariably became the subject of spasm of the abdominal muscles. With each of the dead children the placenta was hypertrophied, adherent, and generally contained indurated masses of lymph, having the external appearance of enlarged glands. On her arrival in London, where she had come for her confinement, it was deemed expedient to induce premature labour, with the view of saving the infant; it being thought probable that the death of her six previous children resulted from the

obstruction of the circulation in the diseased placenta. The membranes were ruptured on the 29th ult. by Mr. Harris (under whose immediate care the patient was); labour commenced six hours after, and terminated in ten, considerable difficulty having been experienced in extracting the body of the child, from the highly distended state of the abdomen. On its perfect expulsion it gasped heavily two or three times, and died. A fearful gush of blood immediately ensued, and ceased on the removal of the placenta, which throughout a great part of its extent was adherent to the uterus. It was an eight months' fetus; its face livid; the eyelids and scrotum infiltrated; the peritoneal cavity containing 15 oz. of deep straw-coloured serum; the membrane covering the intestines being here and there highly vascular, and invested with a thin layer of fine lymph.

In the treatment of the case prior to the induction of labour, the abstraction of a small quantity of blood at two distinct intervals was attended with great relief to the spasmodic action; and Dr. Ramsbotham remarked, that were a similar case to come under his notice early in pregnancy, he would adopt an antiphlogistic course, and follow it up through the remainder of the period: it being reasonable to infer that inflammatory action originating either in the maternal or foetal system had occasioned the disease of the placenta, and consequently the death of the infant. The ascites of the fetus—a rare affection during uterine life—was a point of peculiar interest, taken in connection with the fact of the mother not having had any dropsical symptoms, the latter having always existed in her previous labours, the fetus being perfectly healthy.

Mr. AVERY exhibited a specimen of

Tumor of the lower Jaw,

which was taken from a boy, aged 17, admitted into the Charing Cross Hospital on the 9th of September last. He was of fair complexion and slight make, and had always enjoyed good health up to the time of the appearance of the complaint for which he was admitted. Seven months before his admission he perceived a small tumor under the right side of the lower jaw, which he says was quite moveable like a kernel or marble rolling under the integuments. In the course of two or three months the swelling disappeared, and he began to suffer a good deal from toothache on the same side. He never recollects having received a blow or any injury to the jaw. The pain was severe, but not constant: one of the molar teeth became quite loose, but not decayed, and was extracted. There was at that time some swelling of the gums where the tooth

was taken from, and this enlarged considerably within the next two months, until it had reached full half the size it ultimately attained. The aching had now become severe, although not constant, and was accompanied by sharp lancinating pains, and sensations as if needles were thrust into the part. His sleep was much disturbed at this time, and he became very weak from repeated bleedings from the nose. His breath had become very fetid, and two more loose teeth were extracted. A free incision was then made through the gums to ascertain if necrosis existed. During the following three weeks the disease made very rapid progress, and the patient was sent up to him by his friend, Mr. John Toogood, of the Bridgewater Infirmary. The first appearance of the disease, then, if taken from the commencement of his suffering pain, and before any swelling of the jaw was observed, was little more than four months.

On examination, his right cheek and under part of the jaw presented a tolerably regular and even swelling as large as the half of an orange, bounded anteriorly by the commissure of the mouth, posteriorly by the angle of the inferior maxillary bone; above by the prominence of the malar bone, and below by the submaxillary gland. The integuments and parts of the cheek were tightly stretched over the tumor, but perfectly free and moveable, and quite healthy in appearance, saving the existence of a cicatrix the result of a burn in his childhood. On opening the mouth, a deep groove marked the part from which the teeth had been extracted, and separated the tumor into two parts, both of which advanced anteriorly by the side of the healthy part of the jaw, so that the finger could be placed between it and the tumor. In this position the canine and first molar teeth could be seen firmly fixed in the groove. Several lobulated masses protruded inwards between the inside of the jaw and the tongue, attached firmly to the former at their bases, whilst their summits advanced forwards, and were moveable.

Internally the posterior limits of the tumor extended quite to the angle of the bone, but could not be clearly defined by the finger. Externally the posterior edge of the ramus, just above the angle, was distinctly felt, defined as in the natural state, as was the anterior edge and coronoid process from within. The whole thickness of the body of the bone seemed pretty equally enlarged. There was an enlarged soft lymphatic gland below the swelling.

The operation was performed on the 20th of September (six weeks ago), the bone being divided with the saw in the situation of the external incisor tooth in front, and at the neck and coronoid process behind, with

Liston's bone-forceps. The whole of the disease appeared to have been satisfactorily removed.

The incisions in the cheek and lip healed by the first intention, and on the tenth day he had meat, and masticated it without difficulty. Up to the present time he has had no untoward symptom.

The patient was exhibited to the Society. The left side of the jaw was found in correct adaptation with the corresponding upper jaw, no tendency to deformity being remarked. No measures had been adopted to prevent its being drawn to one side.

The general impression on the minds of those to whom the tumor had been shewn was, that it was one of that class of diseases of the lower jaw for which portions of that bone have been removed a good many times of late years, and which, when entirely removed, have not returned.

Mr. AVERY remarked, that it was to be regretted that the intimate structure of the specimens of tumors preserved in our museums is not described with sufficient minuteness to enable comparisons to be made in those cases which closely approach each other in appearance. He had lately seen examples which resembled, as far as the naked eye could be trusted, the tumor before the Society, and in which the history of the case had shewn a return of the malady; and in the present instance, from the connexion of the disease with the interior of a bone, and the almost entire disappearance of its earthy matter, from the character of the pain, and the rapid progress of the disease, we could not look forward without some anxiety to the ultimate termination of the case.

Mr. JOHN QUEKETT had made a microscopic examination of the tumor, and found that in each component lobule there was an evident fibrous arrangement, the fibres generally being in a radiated form. In substance it was firm, except in parts where the growth was rapid; and a thin section, when placed between glasses for microscopic examination, did not separate into individual fibres under pressure, but kept itself quite entire. When viewed with a power of 200 linear, its fibrous nature was readily made apparent. In all the firmer parts the fibres were closely aggregated together into a compact tissue; but in those parts where the growth was going on, the individual fibres were more apparent, and with the fibres there were numerous cells or cytodasts, with nuclei in their interior, from which new fibres were about to be developed. Portions of bone were found both on the exterior and in the interior of the tumor. In the latter situation the fibrous tissue was firmly adherent to it, and no doubt gave rise to its development, the spicules of the bone agreeing

in all cases with the direction of the fibres of the tumor.

Mr. CRITCHETT exhibited

A Tumor from the Abdominal Parietes, which was removed on Saturday last. It hung from the abdominal wall on the right side, midway between the ilium and umbilicus; it was perfectly moveable, and was easily dissected from the tendon of the external oblique muscle.

The subject of this disease was a female, aged 50, much emaciated, but appearing in other respects free from organic disease. About ten years ago she first noticed a lump in the skin about the size of a marble; it remained stationary about four or five years; it then gradually increased to the size of a walnut, and became red and rather painful. About two years ago it was for the first time seen by her usual medical attendant, when it was found to be about the size of an egg, and painful at times. About nine months ago she received a severe blow upon it, since which time it has rapidly increased to its present size; and about four months ago the absorbents in its vicinity became inflamed, and the glands in the groin enlarged and painful. The pain in the tumor and its vicinity was intermittent, but often severe and lancinating. The tumor was interesting on account of its rare situation, the smallness of its neck in proportion to its bulk, and its peculiar character and appearance—being white, lardaceous, and resembling somewhat the section of a potatoe.

The microscopic examination indicated that it was a fibrous tumor in a very rapid state of development, being composed almost entirely of fibre-cells in different stages of growth.

A specimen of

Small Intestine from an Incarcerated Hernia, and in which a piece of Cinder, by Impaction, had caused Ulceration and Death.

A laundress, æt. 48, who had been subject to a small irreducible hernia for twenty-four years, was admitted into the London Hospital, having suffered from symptoms of strangulated hernia for forty-eight hours previously. In the steps of the operation Mr. Critchett found that though the division of the stricture at the neck of the sac permitted the reduction of the contents of the protruded intestine, the gut itself, owing to intimate adhesion with the sac, could not be passed back. The symptoms of strangulation increased, feculent matter passed by the wound on the fifth day, and the patient died on the sixth. On the post-mortem examination there were evident marks of recent peritonitis, the intestines being remarkably dilated

above, and contracted below the hernia, which was found only to be a section of the calibre of the gut, under the form of a pouch, at the bottom of which was a rugged piece of cinder, which had partially ulcerated through it. By the side of this was another ulcerated opening, which would have formed the artificial anus had the vital powers lasted long enough.

Mr. Critchett thought the case almost unique.

Dr. GOLDING BIRD exhibited a specimen of

Aortic Aneurism, accompanied with Aortitis.

The patient, æt. 30, was admitted into Guy's Hospital, under his care, on Sept. 8. A policeman, of exemplary and temperate habits, who had never suffered from rheumatism, and was quite well up to two years ago, when, after a severe struggle with a person he was arresting, felt a sensation of distress in the cardiac region, which he soon forgot, and appeared to leave no other ill consequences than occasional dyspnoea on exertion. On admission (for what he considered to be asthma), his sallow aspect led to a suspicion of aneurism, and, on examining the chest, evidences of great hypertrophy of the heart were detected, a soft double soufflet being audible at midsternum. He had been unable to lie down from intense dyspnoea occurring in fits at night, but without any pain. In addition to the enlarged heart, aneurismal dilatation of the aorta at its origin, irritating the recurrent laryngeal nerve, was diagnosed, with imperfect sigmoid valves. The pulse was voluminous, and remarkably "splashy." Urine not albuminous. He occasionally felt a gnawing pain in the back, but no abnormal sound was heard in the course of the descending aorta. The paroxysms of dyspnoea rapidly increased, so that it was impossible for him to lie down; irritability of stomach, scanty hæmoptysis, and oedema of the legs and scrotum appeared, and he died worn out on October 22d. After death the heart was found to weigh twenty-two ounces, being immensely hypertrophied and dilated, the aortic valves rigid and admitting of regurgitation; a dilatation, the size of half a walnut, at the base of the aorta, as was diagnosed during life, but, in addition, the whole aorta, from its origin to its division into the iliacs, was inflamed and invariably rough from the copious deposition of albuminous matter under the lining membrane.

Dr. RUSDEN BENNETT exhibited a specimen of

Disease of the Agminate and Solitary Glands of the Ilium,

taken from a man who had been admitted,

ten days ago, into St. Thomas's Hospital, suffering from great debility, the consequence of a previous attack of hepatitis. Three days after his admission he had an attack of fever, the tongue being glazed and dry, the epigastrium tender on pressure. This was followed by delirium, terminating in coma and death three weeks after admission. He had no looseness of bowels, with the exception of the attack being ushered in with diarrhoea, and appearing once again during the progress of the disease. The agminate and solitary glands were greatly enlarged, and the mucous membrane much elevated from the presence of a peculiar deposit beneath.

The meeting adjourned to Monday, Nov. 15, 8 P.M.

MEDICAL SOCIETY OF LONDON.

Monday, Oct. 25, 1847.

Mr. DENDY, President.

A PAPER ON Epilepsy was read by Dr. MARSHALL HALL.

Dr. GOLDING BIRD, in expressing his admiration of the paper, paid some compliments to Dr. Hall on the value of his discovery in relation to the nervous system in clinical teaching, and more particularly alluded to the happy expression, by the author, in defining nervous diseases as having a peripheral or central origin. He should have been glad if, in the paper before the Society, some more distinct reference had been made to that mysterious symptom connected with epilepsy—the aura which occasionally preceded the attack. Was this symptom more generally connected with epilepsy dependent on organic, or merely functional causes? He (Dr. Bird) had once thought that it invariably indicated the presence of organic mischief about the spinal axis, but subsequent experience had convinced him that it was not always so. He alluded to the curious fact of an attack of epilepsy being occasionally stopped by applying a tight ligature round the finger or wrist.

Dr. M. HALL knew little of the nature of the aura attendant upon epilepsy: it appeared occasionally to be associated with various affections of the senses, but the cause and effect were not always clearly traceable. He alluded to one remarkable case in which the fit was preceded by flashes of light in the left eye, and tinnitus aurium of the right ear. With respect to the compression of the veins of the neck influencing an attack of epilepsy, he alluded to an experiment which used to be performed by the late Sir Astley Cooper, and which consisted in tying

the jugular and vertebral veins in a rabbit, with the invariable result of producing convulsion. Dr. Hall then alluded, in connection with this fact, to the action of the platysma myoides in compressing the veins of the neck, and to which he had more fully referred in his paper. He made some remarks on the nomenclature of the disease, and thought we should discard the term epilepsy altogether, and that instead we should employ the generic term *convulsion*, and add to it such other words as would denote its origin, whether that was within or without the cranium. He inquired of members present whether persons affected with epilepsy previous to marriage were liable to puerperal convulsions when they bore children.

Mr. ALDER FISHER had attended several cases of labour in persons previously affected with epilepsy, and in none were there puerperal convulsions. In one case convulsions came on an hour after delivery.

Dr. GOLDING BIRD alluded to the circumstance, that in the convulsions attending Bright's disease, and in puerperal convulsions, as shown by Dr. Lever, the urine was albuminous, and some portion of the elements of the urine had been conveyed into the circulation, and produced the convulsive action. The experiments of Mr. Robinson, of applying ligatures on the renal arteries, and thus throwing the elements of the urine into the circulation, and producing epilepsy, were alluded to. Might not the pressure, in some cases exercised by the gravid uterus on the renal vessels, have a similar effect as ligature of these canals? He made some remarks on the *modus operandi* of mineral tonics in relieving epilepsy; he considered that they did good by rendering the spinal marrow less irritable, and thus prevented the attack.

Mr. ROBERTS could not believe that in all cases of puerperal convulsions the urine was albuminous, as, for instance, in those cases in which the convulsive attack owed its origin to fright; he related one instance in which premature labour and convulsions were suddenly produced from this cause—the patient remaining maniacal for three or four months after delivery. He mentioned two other cases, in one of which the convulsions had evidently depended on an attack of indigestion, and in the other on depression of the mind. He recollected no case in which an epileptic patient had been attacked with convulsions during labour; but he mentioned a case in which, during a first pregnancy, the patient was for two months affected with tonic spasms. These attended subsequent labours, but were speedily removed by the exhibition of the nitrate of silver.

Dr. BIRD said that in these cases the

urine had not been examined, and therefore there was no proof that it was not albuminous.

Dr. HALL did not think that metallic remedies had much influence in epilepsy, and spoke of the apparent benefit that resulted in these cases from any new medicine, showing the influence which the imagination exerted on the case. It accorded with the experience of several eminent accoucheurs whom he had consulted on the subject, that persons previously affected with epilepsy were not, therefore, more liable to be attacked with puerperal convulsion. He related a case in which the urine deposited a large quantity of lithic acid salts previous to an epileptic seizure. Sometimes diabetes issued in epilepsy. The urine in one case was albuminous. These states of the urine were predisposing causes of epilepsy—other causes of an ordinary character coming in aid of those more remote.

Monday, Nov. 1, 1847.

Mr. DENDY, President.

Mr. WARD related the following case:—

Abscess of the tongue, ending fatally, from hæmorrhage.

E. T—, aged 7, was born with a slight red enlargement in the centre of the tongue. No inconvenience or difficulty in the ordinary motions of the tongue, or in swallowing, had ever been experienced: the general health had always been good. In the night of Sept. 27th, 1847, having been in her usual health at bed-time, she was attacked with pain and swelling under the chin and both sides of the lower jaw, slept very little, and the following morning had pain in the tongue, with great difficulty in speaking, or swallowing anything but liquids. She had an aperient powder at night, and the lower jaw was fomented frequently. In this state she continued for two or three days, and was first visited by me on Oct. 1st, when the following appearances were noted:—Face flushed; eyes very bright; countenance anxious; great swelling, redness, and extreme tenderness of the parts under the lower jaw; very slight swelling of the tongue itself, which is covered with a thick brown fur; is unable to open the mouth wide, or move the tongue beyond the teeth, or to speak, and has great pain in the mouth; pulse very quick and sharp; great heat of skin, and thirst urgent; bowels confined.—Ordered eight leeches to be applied under the chin; to take, at bed-time, four grains of calomel; James's powder and sugar, of each three grains; a saline mixture, containing a scruple of nitrate of potash; one table-spoonful every three or four hours.

Oct. 2d.—Slept more last night than since first attacked; fever great; pain slightly relieved; swelling and redness less; mouth nearly closed; was able to swallow the powder in jelly, but refuses the mixture, of which very little has been taken; bowels freely relieved; evacuations dark and offensive.—To take calomel and James's powder, of each three grains; and jalap, five grains, at bed-time. Use a chloride of soda-gargle, warm, to the mouth, by means of a syringe. Fluids taken in the mouth return by the nose.

4th.—Less fever; rests better at night; difficulty in swallowing or speaking the same; can open the mouth sufficient to allow the tongue to be seen, which is nearly fixed, very little swollen, and still thickly coated; the breath extremely fetid; external swelling and redness still considerable; the tenderness great; pulse soft, quick, and weak; the bowels act freely; was able to pass my finger into the mouth. Under each side of the tongue distinct fluctuation can be felt. While pressing on the left side, the lining membrane gave way, and was followed by a profuse discharge of fetid pus, mixed with blood. The point of the finger passed easily to the depth of the first joint, under the tongue, giving the sensation of a large palpy cavity: the tongue not very tender, can be moved from side to side by means of a small teaspoon, but not voluntarily.—Apply strong poppy fomentation frequently, and linseed poultices. Continue the chloride of soda-gargle under the tongue, with the syringe, and take, of a mixture consisting of six grains of quinine, a teaspoonful every four hours. Give a little port wine and water frequently, and milk or thin arrowroot for drink.

6th.—The pain less since the use of the poppy fomentation, generally sleeping for some hours after using it; the discharge of pus and saliva very copious and offensive; lies with the head on the left side to allow the free exit of the discharge, otherwise the mouth is constantly filled; fever less, as also the swelling and tenderness; redness gone; great debility and considerable wasting of the body already; can swallow fluid, and is eager for the wine; very little of the quinine has been taken; bowels act twice a day; can open the mouth wider, but is still unable to protrude the tongue, which is cleaner and moister; on slightly raising it by the handle of a spoon, a large jagged opening may be seen on the left under side of the lower jaw, from which, by gentle pressure under the chin, a profuse discharge of thick pus wells up, of which I pressed out at least two ounces; pulse soft and weak.—Continue the external applications; apply the chloride of soda gargle frequently to the mouth and under the tongue, with the syringe; take a

mixture consisting of two ounces and a half of decoction of bark, syrup of orange-peel and tincture of bark of each two drachms, a fourth part three times a day; continue the wine, and give strong beef-tea and arrow-root frequently.

9th.—Altogether improved; discharge less, but still fetid; takes fluid nourishment frequently, and the wine; the general swelling and tenderness reduced; more on the left side under the jaw than the right; and is unable to protrude the tongue further.—Continue all the applications and the mixture.

11th.—Has not rested so well the last two nights, and has had more pain, particularly on the right side, which is more swollen and very tender, the left side being almost in its natural state; the discharge has been profuse, but thinner; the tongue is moist and clean, not very tender, but less movable; the opening under the left side of the tongue smaller; fever returned; has constant hacking cough; not able to swallow so well, or to speak so as to be understood.—Apply six leeches under right side of lower jaw; continue the fomentation and poultices; also bark mixture and port wine.

12th.—Has slept very little from the frequent coughing, which tires her very much. Discharge from the mouth less, and thinner, but still fetid; emaciation extreme; has changed the position of lying to the right side; left angle of the mouth drawn down; the swelling and tenderness on the right side very much increased since yesterday; feels soft; is more prominent in the centre, and appears pointing here. The finger in the mouth can detect very distinct fluctuation under the tongue, which is thickly coated, and very tender. Takes very little nourishment, only a teaspoonful at a time; prefers wine to other things.—Continue the fomentations and poultices.

13th.—Has had a bad night; is very irritable and feverish; mouth nearly closed; unable to examine the tongue; the swelling about the same; the right cheek and under side of the jaw of a dusky red colour, and very shining, so tender that she has again changed the position, lying on the left side; cough less; pulse very small and weak; takes scarcely anything; discharge more copious, thicker, and slightly tinged with blood; it now appears to come from the right side. In the evening, while coughing, a large gush of blood took place from the mouth, mixed with pus, and flowed freely for more than ten minutes. By applying ice internally and externally, (which I had directed to be in readiness,) the hæmorrhage was arrested. A cold lotion was applied externally, and an alum-gargle frequently to the mouth.

14th.—Has slept very little; unable to lie down from the constant discharge of fetid pus and saliva from the mouth; the swelling of the right cheek and side of the jaw less; very tender, of a dull yellowish colour; able to open the mouth so as to examine the tongue, which does not appear enlarged; no power of moving it herself; is thickly coated with a dark fur, and when pressed upon, a profuse discharge of thick pus fills the mouth immediately; no return of the hæmorrhage; is very pale and faint; pulse very small and weak; has taken more nourishment since last night than for some days before, such as port wine, isinglass in milk, beef-tea, jelly, &c. Continue the lotion and alum-gargle to the mouth with a syringe. At half-past 7 P.M., in the act of swallowing a small piece of bread and butter, profuse hæmorrhage occurred from the mouth, and more than a pint of blood was lost before it was again arrested by the free application of ice; it was of a bright arterial colour. She became faint, and expired at 9 P.M.

On the day following, I made a post-mortem examination of the parts affected. The parotid, sub-maxillary glands, and other parts, having been brought into view, were found (on the right side) so much softened, decomposed, and mixed with coagulated blood and pus, as to be recognized with difficulty, and it was impossible to trace from what vessel the hæmorrhage had proceeded, such was the destruction of the parts. On the left side the glands were of a greenish colour, very much softened, and bathed in pus. A probe passed readily by the side of the jaw into the mouth. I divided the trachea just above the sternum, and dissected the larynx and tongue carefully out. The morbid state of the tongue is shown in the preparation before the Society.

In the discussion which ensued, the case was considered a very remarkable one. The remarks chiefly had reference to the cause of the disease, respecting which various opinions were expressed.

MANCHESTER PATHOLOGICAL SOCIETY.

Dilatation of air-tubes.—Cirrhosis of lung.

Dr. WARRS presented the superior lobe of the right lung of a woman, aged 38 years, the upper half of which consisted chiefly of cavities formed by dilated air-tubes; the immediately adjoining pulmonary structure appearing atrophied, compact, non-crepitant, and coloured like black ink; whilst the lower half of the lobe was drenched with serosity, devoid of air, though comparatively soft and compressible. The middle and

inferior lobes were both emphysematous and oedematous; the right pleural sac was filled with serum, except in the neighbourhood of the superior lobe of the lung, where the serous surfaces were inseparably united, and the summit of this lobe adhered so intimately to the thoracic parietes, that it could not be removed without tearing. The left lung was emphysematous, but not so thoroughly drenched with serum as its fellow; the pleural sac was entirely obliterated by adhesion; the belly contained much turbid yellow serum; the liver was small and in process of nutmeg-degeneration, its peritoneal coat was white and thickened; the spleen was indurated, and the peritoneal covering opaque and thick. No other organ was diseased.

The patient had been affected with cough ever since she had measles when 10 years of age, and was always since then shorter-breathed than most persons. For the last ten years she was compelled, owing to the troublesomeness of the cough and dyspnoea, to abandon her employment as carder in a cotton-mill. The cough was worse in winter and during bad cold weather; she frequently expectorated a little blood, and at times experienced pain in the hepatic region and the hypochondria and epigastrium. Ten days prior to her decease she came under treatment with anasarca and ascites. On careful examination the heart was found perfectly healthy; but besides indications of Laennec's and congestive catarrh, the lungs presented these further signs of disease:—The right subclavicular region expanded less than the left on inspiration, it was dull on percussion, and bronchial respiration and bronchophony, cavernous respiration and pectoriloquy, supplanted the respiratory murmur here, and still more distinctly in the suprascapular and upper half of the right interscapular space; respiration in the rest of the lungs being sibilant, and attended with mucous and sonorous râles. The skin was tawny; the features were sharp and lean; the urine was scanty, high coloured, and deposited a red sediment.

The case was regarded as presenting a combination of diseases, but more particularly of the lungs and liver. Emphysema with congestive catarrh of the lungs, also cyrrhosis or dilatation of the air-tubes in the summit of the right lung, and lastly, cyrrhosis of the liver, were diagnosticated; and the inspection after death (with the exception of the particular character of the hepatic degeneration) verified the previous opinion.

Rudimentary testes in a man.

Mr. FARR caused to be presented the rudimentary testicles of a man, æt. 42 years, who, throughout life, had manifested the

strongest antipathies to the female sex, and who was devoid of hair, on the chin, cheeks, and pubis. His voice was effeminate; in his conversation and general demeanour he inclined to melancholy; his intelligence was of the common average.

The penis and scrotum remained in an undeveloped and infantile state; the testes were found imbedded in the fatty tissues on the pubis, but so devoid of all plumpness and firmness of texture, that they could only be found by tracing back the spermatic chord to its origin; each had passed through the inguinal ring. Examined by aid of the microscope they were found to lack the spermatozoa and spermatic corpuscles, and seemed to be made up of a semifluid fatty substance.

Dysentery.

Dr. RENAUD presented a portion of the colon from a woman who had died of acute dysentery. The preparation presented, so far as he had observed, the general characters of the dysentery at present epidemic in Manchester, when in the early stage.

The bowel was highly inflamed, and of the thickness of a penny-piece. The mucous membrane was swollen and raised into minute elevations, and of a purple colour, inclining to green. There were not any ulcerations. The lower two-thirds of the colon had suffered most severely.

The preparation was brought before the Society for the purpose of showing the type and grave character of the disease which for some time had been so general in this city, and as forming part of the history of the more rapidly fatal cases of the malady.

The dysentery of the present autumn had been peculiarly severe, and, in many instances, required very active treatment: in not a few cases even resisting the influence of curative measures, and proving rapidly mortal. It appeared as following in the wake of the fever with which most of the manufacturing districts had this year been oppressed, and which, in its turn, succeeded rapidly to the disease that had received the name of "land scurvy," being frequently found in complication with it.

Valvular Disease of the Heart—Amenorrhœa.

Mr. FLETCHER exhibited the heart of a girl, æt. 15 years, who died with indications of cardiac disease. The heart was not enlarged; the endocardium was of a deep red colour, particularly in the left ventricle and about the aortic valves. The mitral valve was considerably diseased, the opening through it being so small as only to admit the little finger. Around its base there was a complete ring of cartilaginous formation. On two of the aortic valves were softish

warty-looking growths, about the size of a small split-pea. The lungs were somewhat congested. The kidneys presented appearances of commencing granular disease.

The girl came under treatment one month before her decease, stating, that, for the preceding twelve months, she had suffered from palpitation, dyspnoea, and constant cough, with occasional expectoration of blood.

A bellows murmur was heard in the cardiac region, accompanying the first sound of the heart, and along the course of the aorta. She had not menstruated. Her health had before been tolerably good, although she was ordinarily pale, and had tendency to oedema. She had not had rheumatism, but suffered smartly from scarlet fever at an early age. The symptoms of valvular disease, as well as the anasarca, continued to increase until death.

Correspondence.

EXCLUSION OF MEDICAL WITNESSES DURING TRIALS FROM COURTS OF ASILE.

SIR,—I agree with you in lamenting that the case of Johnson (p. 594), which you so well expose, ended in a manner so unsatisfactory to science; but I do not agree with you in your argument that this and reproach was occasioned by the medical witnesses being shut out during the trial. I have paid some attention to medical jurisprudence,—been frequently summoned as a medical witness to the facts of the case, and, excepting on one occasion, have been invariably excluded, as well as the other witnesses, from the Court. I do not think any scientific man, being called to detail facts, is entitled to any other respect than other witnesses. In the grave charge of murder I do think the arraigned is entitled to any *legal* advantage. Science stands aloof,—dispassionately gives the facts,—dispassionately reasons on the data. On three occasions, after giving my evidence as to the facts, I have had professional gentlemen, who have been present in Court for this express purpose, called by the panel to give their opinion on my evidence. This step also I consider right. No *scientific* evidence ought ever to be admitted that may not undergo the most rigorous sifting: no chaff ought to be found. It is the chaff so often found in medical evidence that destroys our respectability in a witness-box. My maxim as a parish surgeon—a young one also when I began to hold the appointment—was to make myself perfect, as far as possible, in all the points likely to become noticeable at a moment by an officer filling so *responsible*

an *appointment*. I underline these words: I do it advisedly; for I regret to see appointments of this high and important character filled for a paltry salary of ten or twenty pounds sterling.

Every *parish surgeon*, being an honourable and responsible officer, as much so as an hospital surgeon, ought to be able to have at his tongue's end all knowledge professionally stored on rape, pregnancy, sudden death, and the appearances after death more especially.

In the case alluded to by you in your paper, I do think that the error was in having men "not up to their duties" giving evidence in this case. Blame no one else.

Science, as I have already said, ought to stand aloof—clear, precise, definite,—demanding respect neither more or less than she is entitled to.

Your obedient servant,
M. D.

Oct. 20, 1847.

* * Had all the scientific witnesses been in Court and properly examined as to the facts in Johnson's case, we believe that the prisoner would have been convicted. Mr. Watson, by a skilful analysis, established beyond all doubt the presence of arsenic in the body of the deceased; and, if the question had been put to him by the learned judge or counsel, whether the arsenic which he found in the viscera of the deceased was or was not derived from the earth of the churchyard, he could have detailed facts which would have proved that the poison had not been derived from this source. These questions, however, were put to another witness (who had not conducted the analysis) during the absence of Mr. Watson from Court. The latter gentleman, therefore, could only become acquainted with the fact that his chemical evidence was to be entirely overthrown, while the learned judge was delivering his address to the jury; and it was then too late to point out the mistake, or to suggest any means for its correction. We admit, with our correspondent, that this was a great "*legal advantage*" for the individual accused of murder; but we entirely differ from him, in thinking that innocent persons require only *justice*, and not "*legal advantages*," for their acquittal. These are the opprobria of the law, inseparable, it is said, from its just administration, but which unfortunately throw every year upon society, a large number of criminals.

The practice which our correspondent upholds is admirably adapted for the concealment of the *whole* truth, and makes the pretended search after it by scientific evidence a mere mockery. No instance can be adduced in which the cause of a really *innocent* person could by any possibility be damaged by the presence of scientific wit-

nesses in court; while many cases, of which that of Johnson is only a type, might be brought forward to show that, by their exclusion, the guilty are likely to benefit at the expense of public justice. As our correspondent appears to have been invariably excluded from court, except in one instance, he cannot be at all aware of the injury done by his absence. His experience is only on one side, and that the worst side of the case. In one instance which came to our knowledge, a medical witness inadvertently omitted to state an important chemical fact, respecting the proof of the presence of poison. Another medical gentleman, *allowed to be present in court*, noticed this omission, as he had performed the analysis in common with this witness; and feeling bound to swear to the whole truth, stated the fact when his turn for examination came. If the witnesses had been excluded on this occasion, there would have been a very convenient "legal advantage," of which "M.D." would have conceded the benefit to a criminal, on the principle, apparently, of giving to crime the first place, and to justice the second. The attorney who defended the prisoner, when he heard that, but for the accidental presence of the second witness in court the fact would not have become known, declared that he never would again conduct a case for a prisoner without insisting upon the exclusion of all the medical witnesses from court!

We look upon medical men, summoned on these responsible occasions, in the light of gentlemen incapable of combining to make out a story to the perversion of justice; and on this principle, as well as for the proper development of one peculiar branch of evidence, on which they alone can be competent witnesses, we think that, as a rule, they ought not to be excluded from court. In the French criminal courts they are permitted to be present; and we believe it to be the exception to the rule that they are excluded in England. When the exclusion is enforced, we think that it may be generally traced to a sinister attempt on the part of barrister or attorney to procure "a legal advantage," of which the true facts of the case, if they could be brought to light, would very properly deprive the prisoner.

DR. SNOW ON THE EFFECTS OF ETHER VAPOUR.

SIR,—I shall be obliged if you will correct an error in a quotation from my work "On the Inhalation of Ether," in the review of it which you have done me the honour of making in your last number. At page 813, in the first column, quoting from page 39 of the book, you have omitted the word "always." Instead of "It is not possible

to avoid having the breathing somewhat stertorous," it should be, "It is not always possible," &c.

That the omission is an important one, is evident from the circumstance that it has caused you in the sentence immediately following the quotation to give an account of the efficacy of ether directly opposed to the facts I endeavoured to explain. For, whilst in the cases in which ether is well administered the patients show no signs whatever of sensation, much less of "perception of pain," yet in these cases simple snoring is quite an exception, and a state of breathing that can be called stertorous is still more rare.

In the first quotation, taken from page 2, there is an omission of nearly two lines; but this mistake is of less consequence.

Your obedient servant,

JOHN SNOW.

Frith Street, 8th November.

Medical Trials and Inquests.

ALLEGED DEATH FROM PRUSSIC ACID VAPOUR.

ON Friday last an inquest was held on the body of a gentleman, *æt.* 70, who had committed suicide under very singular circumstances. As the facts are of some interest in reference to poisoning by prussic acid, we subjoin a short report of the evidence given on the occasion.

John Richardson, assistant to Mr. Battley, Chemist, of 32, Redcross Street, said, that about half-past 11 o'clock on Thursday morning the deceased came into Mr. Battley's shop, and inquired how Mr. Battley was, and whether he was at home? Witness replied, that he was in the counting-house. The deceased said, "Oh! never mind; pray don't disturb him. I have known Mr. Battley many years; my name is Dr. Randall." He then said he wanted an ounce of hydrocyanic acid, of Scheele's strength, remarking, that before witness gave it to him he should wish to see the bottle, as the strength and qualities of the acid varied so much. Witness, feeling confident that the deceased was a medical man, reached down the bottle containing the acid. The deceased asked witness to allow him to smell it. Witness took out the stopper, and remarked that the deceased would find the acid quite strong enough. At this moment the deceased knocked the stopper out of witness's hand, and, seizing the neck of the bottle, said he knew well enough what hydrocyanic acid was. Witness struggled hard to get the bottle back, on observing

which, the deceased gave it a sudden jerk, and in so doing scattered the acid about his face and over witness's arm and clothes. The deceased then left go of the bottle, and witness said, "My good sir, you have done for yourself." The deceased replied hurriedly, "I wanted, I wanted," and hastened out of the shop. Witness gave an alarm, and various persons were instantly despatched in different directions to seek the deceased. In a few moments Mr. Battley's porter returned, having discovered him in a baker's shop, within a few paces distance. Witness immediately went there, taking with him some solution of ammonia, which he administered to the deceased under the direction of a medical gentleman. Witness could not say that the deceased had not swallowed some few drops of the acid, but he believed that the sprinkling over his face and inhalation of the vapour by deceased would alone have been sufficient to cause death. The deceased was perfectly collected in his manner while talking to witness in the first instance.

Mr. Edward Jolliffe accompanied the last witness to superintend the administration of ammonia. The deceased lived for ten minutes or a quarter of an hour; and from that circumstance, witness was of opinion that very little, if any acid, had been taken internally. If there had been, the deceased could not have lived so long.

Elizabeth Barrett, shopwoman to Mrs. Henderson, baker, of Redcross Street, deposed to the fact of deceased having rushed into her mistress's shop. On doing so he immediately seized a chair, and sat down. Several persons from Mr. Battley's came shortly afterwards.

Mr. Southwood, surgeon, of Fore Street, to whose surgery the deceased was removed from Mrs. Henderson's shop, said, that, on removing the contents of the stomach by the stomach-pump, a strong smell of prussic acid was perceptible. On analysis, however, no poison could be detected, and witness was of opinion that very little, if any acid, had been swallowed by the deceased. Witness had never heard of death resulting from the inhalation of the vapour of prussic acid, but believed that it might do so under certain circumstances.

James Alder, butler in the service of the deceased, said, he last saw his master alive on Thursday morning, at half-past nine o'clock. He was then leaving Harley Street for the city, and, as was his usual habit, he remarked, "Alder, I am going." Witness had noticed the deceased to have been in a very nervous and agitated state on several occasions lately, but was not aware of any cause for it.

Mr. William Charles Simms, clerk in the service of the deceased, said he had ob-

served a vast difference in the deceased's manner during the past few weeks, and his answers to business questions were such as frequently to excite witness's surprise. Witness was not aware of anything having occurred calculated to vex deceased's mind. He knew that deceased had a large balance in his banker's hands. The deceased was a man of very temperate and regular habits generally. Of late he had appeared completely bewildered while transacting business in his office.

Mr. George H. Deffell, son of the deceased, said his father had been particularly afflicted by the commercial embarrassments and difficulties which had prevailed for some time past. On Saturday last he remarked to witness that it was dreadful to think of the state of affairs. The failures which had occurred among the deceased's friends and neighbours distressed him very much, and he himself, of course, suffered from the general depreciation which had taken place in colonial produce. On Wednesday last witness particularly observed that he was very much changed in his manner, his strength appearing to have failed him altogether.

There being no other evidence,

The Coroner summed up, and the jury, having consulted for a few moments, returned a verdict of "Temporary insanity."

. Whether the deceased actually swallowed a portion of the prussic acid or not, is left quite uncertain by the evidence. The *analysis* which the contents of the stomach underwent, is not stated; and it does not appear that the body was inspected,—whether for the sake of saving the expense of a fee, or in deference to the wishes of the relatives of the deceased, we are unable to say: but this is certain—the question whether deceased had or had not been poisoned by the vapour, could be determined in no other way. The contents of the stomach, drawn by the pump, are said to have smelt of prussic acid: this, with the doubtful testimony of the assistant, and the fact that the deceased was able to walk, and did not become speedily insensible, renders it highly probable that some portion of the poison was swallowed. Two witnesses agreed that *very little*, if any acid, had been swallowed; but they seem to have forgotten that *very little* of Scheele's prussic acid is at any time required to cause the death of an adult! Had this case occurred in France or Germany, the facts would have been brought to light by an inspection of the body, and an examination of the contents of the viscera. The deceased undoubtedly died from the effects of the poison, and the coroner and jury appear to have considered it as an unnecessary piece of refinement, to determine

whether his death was caused by the vapour, or by his swallowing a fatal dose of the liquid.

Medical Intelligence.

THE CHOLERA IN RUSSIA.

A ST. PETERSBURGH letter of the 21st ult. states, that the cholera appeared at Moscow on the 30th of September, and between that day and October 7th, 15 persons, of whom 11 were men and 4 women, almost all of the lower classes, were attacked, and of whom 9 died. Several had been previously suffering from diarrhoea and intermittent fever, which were aggravated into cholera by eating unripe fruit and indigestible vegetables, and some from too long a residence in a cold and damp atmosphere. More than a week before the disease appeared in Moscow, one case occurred at Serpoukoff, which is within the Government of Moscow. It was that of a traveller from Veroneje, who fell sick at an inn, and died there; but no other case ensued, either in the town or the environs. According to the reports transmitted to the Minister of the Interior the cholera was still in the city.

The official reports relative to the progress of the cholera, subsequently published by the Russian Government, state that only 120 cases had manifested themselves at Moscow between the 30th of September and 14th of October, 41 of which had proved fatal. The epidemic prevailed at that period in sixteen Governments of the empire, and had crossed the Dnieper. The report of its appearing in Galicia and Podolia was not confirmed. Hitherto it seems to follow a north-western direction.

THE JURY OF MATRONS AND THE CONVICT MARY ANN HUNT.

THE efforts of the press, medical and political, have opened the eyes of the executive to the absurdity of relying upon the opinions of a jury of matrons on a question of pregnancy. Mr. Baron Platt, guided by the verdict of the matrons, had ordered that the law should take its course in the case of the convict Hunt; but the following letter, read at a meeting of the Court of Aldermen on Monday last, shews that the executive can interpose when the necessity occurs:—

“Whitehall, Nov. 6.

“Gentlemen,—With reference to the case of Mary Ann Hunt, the convict under sentence of death in the gaol of Newgate, in which case the Sheriffs, for reasons reported to me, directed that the execution of the sentence should be delayed, and afterwards, by command of her Majesty, the capital

sentence was respited until further order should be given, I have the honour to inform you, that, under the special circumstances which have occurred in this case, her Majesty has been pleased to command that that sentence should not be carried into effect. I request that you will communicate to the prisoner this information.

“The prisoner will be detained in Newgate until after her expected confinement, when the commuted punishment will be notified.—I am, gentlemen,

“Your most obedient servant,

“G. GREY.”

THE MANCHESTER MEDICO-ETHICAL ASSOCIATION.

A LARGE and influential meeting of the members of the profession, convened by public advertisement, was held at the Law Society's Rooms, Manchester, on Thursday evening, the 28th ult., to receive the report of the provisional committee, appointed August 4th, to frame laws and regulations for the Government of a Medico-Ethical Association. The chair was taken by Dr. J. L. Bardsley, and after the report had been read, the following resolutions were unanimously passed:—

Moved by J. WINDSOR, Esq., seconded by R. T. HUNT, Esq.—

“That the principal objects of the association be to frame a code of etiquette for the guidance of its members, to decide upon all questions of usage or courtesy in conducting medical practice; to support the respectability and maintain the interests of the profession; to promote fair and honourable practice; to correspond with bodies or individuals in other parts of the kingdom on any matter touching professional interests; and, by its moral influence, and the exercise of a judicious supervision, to prevent abuses in the profession.”

Moved by W. WILSON, Esq., seconded by D. NOBLE, Esq.—

“That all medical practitioners resident in Manchester, or within twenty miles of that city, who possess a degree, diploma, or license from any legally-constituted corporate institution in the United Kingdom, or from any foreign university requiring residence or examination to obtain its diploma, and who shall be admitted in pursuance of such rules as may be hereafter adopted, shall be members of the Manchester Medico-Ethical Association.”

Moved by S. CROMPTON, Esq., seconded by R. FLINT, Esq., of Stockport—

“That every member, on admission, pay to the Treasurer either the sum of five guineas at one payment, which shall constitute him a life member, or an annual payment of half a guinea.”

Moved by W. C. WILLIAMSON, Esq., seconded by Dr. AINSWORTH—

"That two books, to which are appended copies of these resolutions, and of the proposed bye-laws, shall be deposited, the one at Messrs. Simms and Dinham's, the other at the reading-room of the Medical Society; and that any members of the profession who enrol their names and professional titles in the same prior to November the 18th, shall become, *ipso facto*, members of this Association; provided nevertheless, that any three gentlemen so enrolled may, at the first meeting of the Association, demand a ballot on the admission of any one whose name appears in the list."

Moved by J. G. HARRISON, Esq., seconded by Dr. BROWN—

"That the first meeting of the Association be held in the Law Society's room, on Thursday, the 18th of November, at six o'clock in the evening, when the members will determine on the general laws, and elect the officers of the Association; and that the Honorary Secretary be instructed to give to each member three days' notice of such meeting."

Moved by G. SOUTHAM, Esq., seconded by J. BENT, Esq.—

"That a report of this meeting be forwarded by the Honorary Secretary to the medical periodicals, with a request for its insertion."

After votes of thanks had been severally passed to the Provisional Committee, Honorary Secretary, and Chairman, the proceedings of the evening, which had been conducted with the greatest unanimity and good feeling, were terminated: upwards of thirty gentlemen enrolled their names as members of the association.

PROPOSED BYE-LAWS OF THE MANCHESTER MEDICO-ETHICAL ASSOCIATION.

SECT. 1.—*Disqualifications for Membership.*

Any practitioner who may act in opposition to the principles involved in the eight succeeding laws, shall not be eligible to the membership of this Association; and if already a member, he shall, on infringing the same, be liable to expulsion.

1. No member shall practise, professedly and exclusively, homoeopathy, hydropathy, or mesmerism.

2. No member shall by advertisement, circular, or placard, solicit private practice.

3. No member shall be the proprietor of, or in any way derive advantage from the sale of, any patent or proprietary medicine.

4. No member shall give testimonials in favour of any patent or proprietary medicine, or in any way recommend their public use.

5. No member, who may keep an open

shop, shall sell patent medicines, perfumery, or other articles than pharmaceutical drugs and preparations.

6. No member shall enter into compact with a druggist to prescribe gratuitously, and at the same time share in the profits arising from the sale of the medicines.

7. No member, being a graduate in medicine engaged in general practice, shall hold the office of physician to any public institution.

8. No member, acting as medical officer to a public institution, or poor-law union, or as district vaccinator, shall abuse the privileges of his appointment to the injury of his fellow practitioner.

SECT. 2.—*Code of Etiquette.*

1. No member shall, on any pretext, meet in consultation persons practising medicine, who do not possess one or more of the qualifications enumerated in No. 2 of the general laws.

2. No member shall meet in consultation any medical practitioner who may be inadmissible, by the operation of the bye-laws, section first, as a member of this association.

3. No member shall meet in consultation any practitioner who has been expelled this association.

4. When a senior practitioner is called upon to meet his junior in consultation, for a second opinion, it shall be competent for the former to represent the propriety and advantage of obtaining the assistance of a more experienced practitioner; but if the patient specially desire to have the opinion of any qualified member of the profession, even though a junior, it is the duty of the practitioner in attendance to acquiesce.

5. When two practitioners attend in consultation, and, the period of meeting having been fixed, one of the two neglects punctuality, thus wasting the time of the other, the latter shall be expected to wait ten minutes, and then visit the patient.

6. In consultation, the graduate in medicine practising as physician, is entitled to the precedences of the general practitioner.

7. In consultation, the practitioner last called in is entitled to precedence (except in the case provided for by rule six); at the same time it is submitted that, should the latter be a junior, the greatest delicacy and consideration should regulate his conduct.

8. When a practitioner attends for another, or in consultation with another, and it appears necessary to change the treatment, it should be done with the most scrupulous care, to avoid reflecting on the previous treatment, which in no instance should be openly condemned.

9. When a practitioner is consulted by a patient already under the care of another, he shall on no account interfere with the

case, but shall request a consultation with the gentleman previously in attendance. If, however, the latter refuse this, or if the patient insist on dismissing him, and a communication to that effect be made, the practitioner last consulted will be justified in taking charge of the case.

10. When during sickness, affliction, or absence from home, one practitioner has entrusted the care of his practice to a professional friend, the latter shall not make any charge to the former, or to the patients, for his services, but shall in all things be the *locum tenens* of the absentee.

11. In all other cases where a practitioner is requested by another, or any member of his establishment, to act for him, the former shall be entitled to compensation at the hands of the latter, unless some previous arrangement has been made between the parties: the fee to be regulated by the circumstances of the case, but in no instance to be less than half-a-crown.

12. When a practitioner is called upon by the assistant or servant of another, to attend to an accident or other emergency in a family to whom both are equally strangers, the former shall be entitled to take charge of the case throughout; but if the family should communicate their previously formed intention of employing the latter, he shall be remunerated according to rule 11, and resign the case.

13. When a practitioner is called in on an emergency by a family usually attended by another, he shall, when the emergency is provided for, send for the ordinary medical attendant, and after one consultation, resign the case into his hands, but be entitled to charge the family for his services.

14. When a practitioner is called to attend at an accouchement for another, and completes the delivery, he shall, with the exception provided for in rule 10, be entitled to receive the fee; but when the delivery is not completed on the arrival of the pre-engaged accoucheur, the case shall be immediately resigned to him and the fee equally divided.

15. When a practitioner is consulted by a patient whom he has previously attended as the officiating friend of another, during sickness, or absence from home, he shall inquire whether the patient has determined on changing his medical attendant; if so, he will be justified in taking charge of the case,—if not, and the question be simply one of preference between the two practitioners, he should decline attendance.

16. When a patient is not satisfied with the treatment of the officiating friend left in charge, and wishes to have another opinion, the second practitioner called in shall stand

in the relation of physician or consulting surgeon.

17. When a practitioner is ill or absent from home, and the patient wishes to have a medical man of whom he knows something, rather than the officiating friend of whom he knows nothing, the practitioner so selected shall be entitled to act according to rule 13.

18. When a practitioner has officiated for another, and the ordinary practitioner has resumed his attendance upon a case, the former shall on no pretext make friendly calls upon the patient, unless justified by previous personal intimacy.

19. While this association does not propose to interfere with the medical relief part of friendly societies, of artisans, and operatives, it enacts, at the same time, that no member, being a candidate for the office of surgeon to a club or friendly society, shall, by canvassing, treating, or other undue familiarity, solicit the votes of its members.

20. "When a diversity of opinion, or opposition of interest, occasions controversy and contention between medical practitioners, the matter in dispute shall be referred to another physician or surgeon, as the case may be; but neither the subject matter of such references, nor the adjudication, should be communicated to the patient or friends, as they may be personally injurious to the individuals concerned, and can hardly fail to hurt the general credit of the faculty."—*Percival's Medical Ethics*.

21. "Officious interference. It frequently happens that a medical man may have the case of another practitioner stated to him in so direct a manner, as to render it difficult to decline any attention to it. Under such circumstances, his observations should be delivered with the most delicate propriety and reserve: He should not interfere in the curative plans pursued, and should even recommend a steady adherence to them, except in cases where either artful ignorance imposes on credulity, or neglect, or rashness, threatens the patient with imminent danger."—*Ibid*.

22. "When a practitioner is called as a witness in any trial, he should be careful to avoid acting as a partizan, and for this purpose should, if possible, previously consult with any other medical practitioner who may be engaged on the same or opposing side as to the medical facts of the case; but this shall not prevent in any way the courteous statement of his own private opinion concerning them."—*Beck and Smith*.

SEC. III.—On the adjudication of Disputes.

1. All charges of non-observance of the bye-laws, or breach of the code of etiquette,

brought by one member against another, shall be decided by the council.

2.—In case of a dispute arising between a member of the association and a qualified medical practitioner, who is not a member, on any point of etiquette, the latter shall be invited to name a medical friend, who, in conjunction with two others, one nominated by the member and the other by the council, shall constitute a 'court medical' to judge and decide on the case, and their decision shall be final.

3.—In case of a dispute arising between qualified practitioners, who are not members, but who may both request the interference of the association, the council shall have power to adjudicate in such manner as, under the circumstances, may seem most desirable.

Note.—The term *practitioner* in these bye-laws includes all grades of medical men when not otherwise specified.

THE NEGLECT OF SANITARY MEASURES IN THE BOROUGH OF TYNEMOUTH.

SIR,—I beg to send you the following memorial, which has been forwarded to Sir George Grey from this town.—I remain, sir,

Your obedient servant,
EDWARD GREENHOW.

North Shields, Nov. 4th.

"*Memorial to the Right Honourable Sir G. Grey, Bart.*

"Sir,—We the undersigned being duly-qualified medical men, residing in the borough of Tynemouth, beg to represent that fever is prevailing in the said borough to some extent, and is obviously on the increase, and that there exists within the said borough many open dunghills and other places, where large accumulations of offal and other offensive and noxious substances, are allowed to remain, to the manifest injury of the health of the inhabitants, as it is in these localities that fever almost exclusively prevails.

"And it appears to your memorialists, that it is of the utmost importance that all such nuisances should be speedily removed, not only with a view to check the progress of the fever which already prevails, but also that the town may be placed in a state best calculated to resist the ravages of Asiatic cholera, should it, which appears to be too probable, again visit this country.

"Your memorialists beg further to state that the only body possessing powers to deal with these nuisances is that of the Commissioners under the North Shields Improvement Act, and they are too large a body, and their meetings are too remote, to effect any good; and also that there being but one magistrate residing in the borough, it is

difficult to bring offenders to justice, and so nuisances are allowed to remain.

"To obviate these difficulties, and to attain the objects required in a prompt and summary manner, your memorialists beg to suggest, that the whole of the medical men residing in the said borough shall be incorporated into a board of health, with similar powers as were granted to those constituted at the time of the cholera, or such other powers as Her Majesty's Government may see fit, so as to enable them to cause the removal of the noxious accumulations complained of, and to take such other sanitary measure as they may find necessary for the preservation of the health of the inhabitants.—We have the honour to remain, sir,

Your obedient servants.

"Signed by Edward Greenhow, M.D., F.R.C.P. Edin.—Archibald Megget, M.D.—William Bramwell, M.R.C.S.—Thomas Ingham, M.R.C.S.—E. Headlam Greenhow.—William Lindaley Emmerson, Surgeon.—John R. Owen, M.R.C.S.—John B. Bramwell, M.D. Edin. M.R.C.S.—Samuel Fenwick, M.D.—J. Stephens, M.R.C.S.—Walter Taylor.—Thomas H. Pyle.—David Mackinlay.—William Bourne, M.D., M.R.C.S.—William Hart.—Henry Coward, Surgeon.—Marmaduke Marr, Surgeon.—R. D. Ormsby, Surgeon.

SANITARY MEASURES AT GLOUCESTER.

To the Right Worshipful the Mayor of Gloucester.

SIR,—We, the undersigned, physicians and surgeons of this city, beg to submit to you the following memorial:—

The rapid approach of Asiatic cholera to this country seems to us to demand immediate attention and preparation; and therefore, without wishing to create any unnecessary or useless alarm, we do not hesitate to address you, and to urge upon you the importance, both for general and individual safety, of using without delay all practicable means, in the first place, to improve the healthiness of the city; in the second, to put in train such arrangements as, in the event of the disease revisiting us, may best provide for the welfare of the sick, and for the safety of those not yet infected.

With respect to the first point—to which we consider it of the highest importance to direct your attention at this time, we cannot but express our regret that we have very little cause for congratulation upon the existence of any of those sanitary provisions which are so necessary for the health of all, but more especially of the poorer classes. All the evils which arise from the total want of a system of sewerage exist here to a very serious extent, and; in the event of the arrival of the cholera, will tend, by the depressing influence which they exercise on

the powers of life, to render the inhabitants of many localities a comparatively easy prey to this, as they would be, from the same cause, to any other pestilential disease with which it might please Providence to afflict us. The city is surrounded with stagnant ditches, which receive a great portion of the liquid and other refuse of the town. Of the remainder of this refuse, a large quantity, in the poorer streets and suburbs, is thrown out upon the surface, exhaling from thence, or during the process of surface drainage, its offensive and deleterious effluvia. Those localities which, on a former occasion, were visited with cholera will be found in the same disgraceful state as that which existed sixteen years ago: and to this should be added, in your consideration of this subject, that an increased population must necessarily enhance the amount of danger.

If the all-important measure of underground drainage be not immediately proceeded with, we consider it at any rate imperative that means should at once be taken to cleanse out all offensive and stagnant ditches, and all receptacles of dirt and filth, and, wherever it is possible, to direct currents of water so as to carry away as fast as it is deposited all liquids and other refuse; and, where this is not practicable, to provide that from day to day everything may be removed by an efficient system of scavenging, so that no accumulation may be allowed to take place.

If the measures necessary to remove accumulations of filth, and to cleanse their receptacles, be not adopted as *precautionary*, their employment when the calamity comes upon us will undoubtedly be attended with increase of danger.

The second point would embrace the inspection of the houses of the poor, lodging-houses, &c., for the purposes of purification, ventilation, and, if necessary, of disinfection; the selection of suitable hospitals for the reception of the sick; the arrangement of districts for medical and other superintendence, and other details not necessary to enumerate.

On our part, at the same time that we offer these suggestions, we beg to assure you of our disposition cordially to cooperate with our fellow-citizens in all such measures as may seem necessary to avert, or, should it arrive, to mitigate the calamity which now threatens us; and, in conclusion, calling your especial attention to the above memorial, we would respectfully but earnestly urge you to adopt such measures for carrying out our suggestions as in your discretion may appear most desirable—subscribing ourselves

Your obedient servants,

[Signed by every resident practitioner in Gloucester, and forwarded to the Mayor on the 30th ult.]

RAPE UNDER THE INFLUENCE OF ETHER.

A DENTIST in France has been lately brought to trial before the Court of Assizes of the Seine, on the charge of having committed criminal assaults on two young women, named Hyacinthe and Henriette, whilst they were in a state of insensibility, caused by the inhalation of the vapour of ether. From the nature of the details which had to be entered into, the trial took place with closed doors; but it transpired that the young women, who had gone to the house of the prisoner for the purpose of having teeth drawn, had been persuaded by him to inhale the vapour of ether, on the ground that it would prevent them from suffering pain; and when he had thrown them into a somnolent state, which, however, they said did not prevent them from knowing what passed, he committed the criminal assaults complained of. One of the girls declared, that though at the time she knew well what was passing around her, she was totally unable to offer any resistance; and that at the moment the offence was committed, she became unconscious, and remained so for some time. The prisoner's advocate said that the prisoner totally denied that he was guilty; and the learned gentleman argued that the effects produced by the inhalation of ether on the imagination were such that it was very probable that the girls might have taken their own hallucinations for facts. It, however, appeared that one of the girls on her return home had her dress disordered, her hair dishevelled, and was greatly agitated. The jury declared the prisoner guilty, and the Court condemned him to six years' hard labour at the hulks, but without exposure on the pillory. It was also ordered the *syndics* of the prisoner's bankruptcy, his arrest having led to a bankruptcy, should pay one of the girls, who is under age, a sum of 1,500*fr.* as damages.

OBITUARY.

On the 5th inst., in Gordon Street, Gordon Square, Robert Richardson, Esq., M.D., aged 68.

On the 6th inst., at 18, Portman Street, Powell Charles Blackett, Esq., surgeon, R.N., aged 60.

STRIPED MUSCULAR FIBRE IN THE STOMACH OF THE LOACH.

PROFESSOR Budge, of Bonn, has recently proved the existence of muscular fibres of animal life—those, namely, which are marked with transverse and longitudinal striæ—in the muscular coat of the stomach of *cobitis fossilis*, the common loach. This circumstance is one of considerable interest, especially when added to the recent discovery of Reichert of the existence of these striped muscular fibres in the intestinal of the cy-

primus tinea, (common trench.) Professor Budge states, however, that in the cobitis the striped fibres only exist in the stomach, not in the intestinal canal. — *Schmidt's Jahrbucher*, 4, 1847.

DANGER ATTENDING THE TOO EARLY DEVELOPMENT OF THE MENTAL FACULTIES IN CHILDREN.

THERE can be no doubt that many a child has been sacrificed in early youth to the pride of parents, who, delighted with the intellectual activity of their children, have striven to make them prodigies of learning. But in these cases of early and undue employment of the brain, inflammation of the hemispherical ganglion, or of the lining membrane of the ventricles with serous effusion, has usually been the cause of either a fatal issue or of subsequent mental imbecility. The late Mr. Deville related to me an interesting case of this kind. An extremely intelligent boy, of about 12 years of age, was brought to him for phrenological examination by a parent who was very proud of the intellectual endowments of his child. Mr. Deville gave his opinion of the boy's character, at the same time cautioning the father of the dangerous course he was pursuing. But the father's reply was, "all that other boys considered labour and hard study are mere child's-play to him; that his studies could not be hurting him, he enjoyed them so much." Again Mr. Deville endeavoured to save the child, but the father would not attend to the warning. Two years from that time the father again called on Mr. Deville, and in reply to his inquiries after his child, the father burst into tears—his child was an idiot.—*Solly on the Brain*.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Oct. 30.

BIRTHS.	DEATHS.	Av. of 5 Ant.
Males.... 658	Males.... 453	Males.... 528
Females.. 633	Females.. 493	Females.. 518
1291	945	1046

DEATHS IN DIFFERENT DISTRICTS.

(34 in number; — Registrars' Districts, 129.
Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	123
NORTH—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 366,303)	191
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	170
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 333,247)	193
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich .. (Pop. 479,466)	270
Total	945

CAUSES OF DEATH.

ALL CAUSES	945	Av. of 5 Ant. 1046
SPECIFIED CAUSES	945	1039
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	276	212
Sporadic Diseases, viz.—		
2. Dropsy, Cancer, &c. of uncertain seat	90	104
3. Brain, Spinal Marrow, Nerves, and Senses	183	157
4. Lungs and other Organs of Respiration	243	233
5. Heart and Bloodvessels ..	27	34
6. Stomach, Liver, and other Organs of Digestion ..	79	74
7. Diseases of the Kidneys, &c. ..	11	9
8. Childbirth, Diseases of the Uterus, &c.	13	14
9. Rheumatism, Diseases of the Bones, Joints, &c.	12	7
10. Skin, Cellular Tissue, &c.	4	2
11. Old Age	26	65
12. Violence, Privation, Cold, and Intemperance	19	29

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	26	Convulsion	23
Measles	43	Bronchitis	35
Scarlatina	61	Pneumonia	68
Whooping-cough ..	12	Phthisis	116
Diarrhoea	0	Dia. of Lungs, &c. ..	11
Typhus	73		
Dropsy	10	Toothing	4
Sudden deaths ..	3	Dia. Stomach, &c. ..	4
		Dia. of Liver, &c. ..	21
Hydrocephalus ..	31		
Apoplexy	21	Childbirth	19
Paralysis	17	Dia. of Uterus, &c. ..	3

REMARKS.—The total number of deaths was no less than 101 below the weekly autumnal average.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	30.14
" " Thermometer	49.3
Self-registering do. max. 75.8 min. 36.5	
" in the Thames water — 52. —	
a From 12 observations daily. b Sun.	

RAIN, in inches, 0.38: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was about a degree below the average of the month.

NOTICES TO CORRESPONDENTS.

We regret that, owing to its length, we have been compelled to postpone the concluding portion of Dr. Hare's paper. It will be inserted next week.

Will M.D. oblige us with his name in confidence? We have no doubt that the remarks on Cholera will be acceptable to the profession at the present time.

Mr. Martin, Reigate.—The resolutions forwarded to us were printed at full length in our number for Oct. 29, page 775.

Dr. Clay's letter will be referred to the publishers of the journal.

Mr. H. Smith's case of Sarcomatous Tumor of the Neck will have early insertion.

Dr. Day's lecture, and the communications of Dr. Hughes, Dr. King, and Dr. Buchanan, next week.

J. T.—1839 must have been printed by mistake for 1819. Any one, who was not in practice before 1819, infringing the Act by practising as an apothecary.

Lectures.

LECTURES

ON THE

DISEASES OF INFANCY AND
CHILDHOOD,

Delivered at the Middlesex Hospital.

By CHARLES WEST, M.D.

Physician-Accoucheur to, and Lecturer on Midwifery at, the Middlesex Hospital, and Senior Physician to the Royal Infirmary for Children.

LECTURE XV.

Affections of the Respiratory Mucous Membrane—comparative rarity of catarrh during the first weeks of life—coryza, simple and pseudo-membranous, or malignant—catarrh, causes adding to its importance in early life—its treatment—danger of bronchitis or pneumonia.

Post-mortem appearances of bronchitis—redness of the membrane—nature of the contents of the bronchi—dilatation of their cavity.—Extension of the inflammation to the lining of the pulmonary vesicles, producing vesicular bronchitis.

State of the lungs in bronchitis—frequency of congestion—carnification of some lobules—possible extension of inflammation to the pulmonary tissue, producing lobular pneumonia—suppuration of these patches producing vomicae.

ALTHOUGH two lectures have already been devoted to the pathology of the respiratory organs, yet, until to-day, we have not been able to commence the study of their special diseases.

They may be divided into the three grand classes—of the inflammatory, the nervous, and those which result from morbid deposits. We will examine these in the order in which I have enumerated them.

At every age inflammatory affections of the respiratory mucous membrane exceed all others in frequency, and even when the pulmonary substance becomes eventually involved, it is often by the extension to it of mischief which began in the mucous membrane. But in infancy and childhood this is pre-eminently the case, for the delicate and highly vascular lining of the respiratory organs resists but feebly the influence of noxious impressions from without, while it sympathises most acutely with many morbid processes within.

This extreme susceptibility of the mucous membrane of the respiratory organs in childhood renders its disorders of very fre-

quent occurrence, while we are compelled to study closely the signification of symptoms that may betoken disturbance from such various causes. Something of this sympathy with the affections of other parts exists even in the adult, as we may see exemplified in the cough that attends upon affection of the liver, but in the child the sympathetic disorder of the respiratory mucous membrane is vastly more frequent; and nurses, taught by experience, will speak to you about a tooth cough, a stomach cough, a worm cough; while you will soon find for yourselves that the intestinal mucous membrane is seldom affected without that of the respiratory apparatus suffering too.

It is a curious fact, however, to which Professor Jörg of Leipzig* was the first person to call attention, that this extreme susceptibility of the lining of the respiratory apparatus does not exist to the same degree during the first month or two of life as it does afterwards. The exposure of an infant two or three weeks old to a low temperature or to a vitiated air, would be followed by disturbance of the function of the liver and the occurrence of jaundice, or, perhaps, the muscular power might be so far depressed as to render the child incapable of taking a full inspiration, so that its lungs collapse, and it dies from disorder of the respiratory organs, but without the cough or bronchitic symptoms which would not fail, if it were a little older, to announce the irritation of the mucous membrane of the air tubes. Why this is so I do not know, but suppose it to be the result of the generally feeble vitality which renders the lining of the bronchi less susceptible, just as that of the intestine also seems to be at the same period, since, while constipation is frequent, diarrhoea is comparatively rare during the first two months of life.

The mucous membrane of the nares, however, has not by any means this insensibility, and coryza is an affection most frequent, and most important, during the first two months of life, when the other forms of catarrh are comparatively rare.

This affection, in its most frequent form, is a source of discomfort rather than of danger. Its most prominent symptom has given rise to its vulgar name of "the snuffles;" for, the mucous membrane of the nares being swollen, the child is no longer able to breathe through its nose as it was wont to do, but is compelled to breathe likewise through its mouth, and its difficult inspirations are attended with a peculiar snuffling noise, which, during sleep, sometimes amounts to a complete snore.

* Handbuch der Kinderkrankheiten, 8vo. Leipzig, 1836, p. 531.

As, in common catarrh, the secretion from the membrane is at first suppressed, afterwards it flows in an increased quantity, and then at length it is altered in character, and becomes thicker and puriform; and then it sometimes dries and forms crusts about the nostrils, which interfere greatly with free respiration, and cause the child much annoyance. At the outset there is often a degree of heat of skin and febrile disturbance, but these symptoms soon subside, and, with the exception of the snuffling respiration, the child seems quite well. If the attack be more severe, however, it may occasion a good deal of suffering, for if respiration through the nose be very much impeded or altogether prevented, the child is rendered unable to suck, and so soon as it has seized the nipple and begun to draw the milk, it is compelled to leave it in a state of threatening suffocation. Its distress, too, is further increased by the circumstance that its mouth being constantly kept open in order to breathe, the tongue and throat become extremely dry, and deglutition, even when the child is fed with a spoon, is often attended with difficulty. Any such severity of the disease, however, is very unusual, though such cases do sometimes occur, and even prove fatal; the difficulty of breathing and sucking, together, wearing out the patient. When this event occurs, something more seems to exist than a simple inflammation of the Schneiderian membrane, since it either secretes a very tenacious mucus in extreme abundance, or becomes coated with false membrane which sometimes extends even to the tonsils and palate. Cases of this kind are usually associated with extreme depression of the vital powers, and have received on this account the name of *coryza maligna*. In the Foundling Hospitals of the continent this malignant coryza is not very uncommon. I have never but once, however, seen any thing approaching to it in severity, except where it has occurred as a complication of scarlatina. In that instance, a little boy, six months old, was brought to me on the 25th of October, 1842. His health had been good until the 20th, when he became hoarse; on the 22d this hoarseness had much increased, and he became unable to suck, since which time he had continued to grow worse. When I saw him his skin was warm, face rather flushed, eyes watering, and a thick ropy mucus obstructed his nostrils. He cried with a suppressed but squeaking voice, and breathed with a peculiar wheezing noise, though air entered the chest unattended with any r le. The child was unable to suck, and even when he drank from a cup the fluid often returned through his nose. The inside of the mouth was very red, and the tonsils and oft palate were especially so. The mouth

was full of an extremely tenacious mucus, which it was necessary from time to time to take out with the hand.

A lotion was injected up the nostrils, composed of 3j. of alum to ʒij. of water, with great relief to the child, the secretion from the nares becoming more decidedly puriform, but less adhesive; and the child became able to suck a little. On the 28th, however, the child's powers seemed much depressed; it sucked eagerly, for the secretion from the nose had become almost watery, but it swallowed with much difficulty. A layer of false membrane of a yellowish-white colour had now appeared on the soft palate and back of the hard palate, and on the tonsils.

A lotion of three grains of the nitrate of silver to an ounce of water was applied to the back of the throat, and a mixture of the extract of bark with ammonia was given every six hours. On the 1st of November the child was better, could swallow as well as suck well, and the false membrane had entirely disappeared from the mouth, but the palate was still red, and presented some broad superficial patches of ulceration. The subsequent recovery was tardy, but the immediate danger was over, and no relapse occurred.

The simple coryza calls, as I have already observed, for but little treatment, and, indeed, treatment appears to exert but little influence over it. It is desirable, however, if there be much difficulty in breathing, that the child be taken from the breast, though it may still be fed with mothers' milk by means of a spoon, since the fruitless efforts to suck aggravate its sufferings, and should therefore be prevented. If heat of skin and other indications of fever attend its onset, some mild diaphoretic medicine, with a few drops of ipecacuanha wine, may be given, attention must be paid to the state of the bowels, and in the course of ten days or a fortnight the infant will be found again breathing quietly, and the disease will have subsided. As the secretion becomes thicker care must be taken to prevent its accumulating and drying at the opening of the nostrils, by which it would cause serious discomfort to the child. In the malignant variety of the disease local as well as general treatment becomes necessary. The tendency to the formation of false membrane in the nares must be combated by injections of alum or nitrate of silver, while the condition of the fauces must be watched as narrowly as that of the nares, and similar applications must be made to them on the appearance of any unusual redness there, since such increase of vascularity is only the first stage of that process which would issue in the exudation of false membrane. At the same time, a general tonic plan of treatment will

be called for, and care will be needed to ensure the child's taking a proper quantity of nutriment, since its powers of sucking and of deglutition will in all probability both be impaired.

Cases are sometimes met with in which coryza, though not of a severe kind, is troublesome by its continuance for weeks together. This chronic coryza is, I believe, almost always connected with a syphilitic taint. I have on several occasions met with it when there were not above one or two spots of copper-coloured eruption to mark its character; and a few instances of it have come under my notice in which no positive evidence of venereal taint, either past or present, could be obtained, but which nevertheless got well under the use of small doses of the Hydrarg. c. Crêtâ.

With the increasing age of the infant there is a growing liability to *catarrh*, and during the period of dentition the susceptibility of the mucous membrane of the respiratory organs appears to have attained its maximum. Slight variations of temperature now induce catarrhal seizures; or even, independently of any such exciting cause, the mere approach of a tooth towards the surface of the gum often gives rise to its symptoms, which subside when the source of irritation ceases. Such attacks often alternate with attacks of diarrhoea, or the two coexist; the symptoms of disturbance of the intestinal mucous membrane predominating at one time, those of disturbance of the respiratory membrane at another. The preponderation of one or the other affection seems much to depend on atmospheric causes; and children who, during the months of June, July, August, and September, would suffer from diarrhoea, will, under precisely similar circumstances in the earlier months of spring, or the later months of autumn, suffer from catarrh. From the extreme susceptibility of these two great mucous surfaces arise a large proportion of the ailments, and many even of the serious diseases of infancy. Morbid as well as reparative processes go on most rapidly in early life: the flux of to-day may to-morrow be attended with dysenteric symptoms; the catarrh of to-day may to-morrow have put on the grave features of acute bronchitis.

Now these two circumstances taken together—the extreme susceptibility of the respiratory mucous membrane, and the rapidity with which its trivial disorder sometimes becomes a grave disease, give to the catarrhal affections of infancy an importance which in more advanced life they do not possess. This importance, too, is still further increased by the tendency of the lung to become collapsed when the entrance of air into its minuter cells is impeded even by a comparatively trivial cause; while in

other cases, or even in connection with the collapsed condition of the lung, the inflammatory process may invade the pulmonary cells and the general tissue of the lung, and that which had seemed a slight cold may grow to a dangerous bronchitis, or a still more dangerous pneumonia.

Of catarrh itself and its general characters little need be said. Allowing for the difference between the ages of the patients, its symptoms are the same as in the adult. Sneezing and running at the eyes and nose, and cough, a hot skin and quickened pulse, attend it. In some children the febrile disturbance with which even a common attack of cold sets in is very severe for the first twenty-four hours or more, and then the more threatening symptoms subside, and the true nature of the affection becomes apparent. At other times, when catarrh is extremely prevalent, epidemic in short, this severe onset is usual, and the affection closely resembles, or is probably identical with, influenza. Often, too, you will find the commencement of an epidemic of whooping-cough preluded by an unusual prevalence of catarrh, the cough by degrees assuming in more and more numerous cases the paroxysmal character and peculiar sound of pertussis. It is unnecessary to allude to the catarrhal symptoms which precede measles, but bearing in mind that what seems to be a mere cold may turn out to be the first stage of a very serious malady, you are furnished with an additional reason for not alighting it. Lastly, you must not forget that the frequent return of attacks of catarrh is sometimes an indication of that irritable state of the bronchial membrane which the abundant deposit of tubercle in the lungs occasions; and this, again, yields another argument for not neglecting an apparently trivial ailment.

While it is your duty, however, on so many grounds, to watch closely every child, although its indisposition may not seem to be more than a simple catarrh, yet in the way of actual medical treatment very little is required. The child must be kept in one temperature; and, if the nursery be an airy room, it is desirable that it be confined to that apartment. If already weaned, it may be well to withdraw some of the more solid articles of diet; if not, care must be taken that the child does not, in consequence of its thirst, suck too much; and a little barley-water should therefore be given it from time to time. A warm bath at night will do much to allay the heat of skin; and, if the febrile disturbance be considerable, a couple of grains of James's powder with half a grain of calomel may be given to a child a year old at bed-time. During the day, a mixture, containing a few drops of ipecacuanha and antimonial wine, with a little of

the compound tincture of camphor, if the cough irritate by its frequent return, may be given with advantage, and, as the fever subsides, the spirits of nitrous ether may be substituted for the antimonial wine.

The danger, however, in these cases is of a more grave disorder of the air-passages coming on; and this brings us to a subject which we cannot pass over hurriedly—namely, the bronchitis and pneumonia of infancy and childhood.

The study of these affections in childhood is beset by some difficulties which we do not meet with in the adult. The points of difference between bronchitis and pneumonia are sufficiently well marked in the adult for all purposes of practical utility, although many inquiries may be started with reference to the intimate nature of the morbid processes which we may be unable to answer satisfactorily. Besides, whether the capillaries, or the pulmonary cells, or their parietes, be the structures first attacked, it is clear that they are all involved in pneumonia from a very early stage of the disease, and hence we find it attended from the outset with peculiar symptoms such as do not occur in bronchitis. Pneumonia similar to that of the adult is sometimes observed even in early childhood; but it often happens that, though the pulmonary substance becomes eventually a partaker in the disease, it yet was not so at first; but the inflammation, beginning in the larger air-tubes, has passed along them to the smaller bronchi, and then at length involving the tissue of the lung, the case comes to be one neither of pure bronchitis nor of pure pneumonia, but a mixture of the two, which has not inaptly been termed *bronchio-pneumonia*. Another source of difficulty in the study of these affections, as well as an occasion of the great peril that attends them, is the tendency which we have already observed in the lung during early life to become collapsed, and no longer to admit that air, without which the changes in the blood cannot take place, and the absence of which naturally aggravates the mischief that the inflammatory disease itself tends so immediately to produce.

I must beg you therefore to pardon me if I enter rather more minutely than is my custom into the description of the *morbid appearances produced by inflammation of the lungs and air-tubes* in infancy and childhood.

An increased degree of *redness of the mucous membrane of the bronchi* is almost constantly observed in the case of children who have died of inflammation of the lungs or air-tubes. There are three sources of error, however, against which it is essential to guard when examining the bronchi with reference to this point. The one is the

occasional disappearance of redness after death, even where the presence of an abundant muco-purulent secretion in the tubes bears evidence to the activity of the inflammatory process; the second is the apparent redness of the smaller tubes in cases where the lungs are congested or inflamed, and which may be due not to the increased vascularity of the bronchi themselves, but to their transparency, allowing that of the subjacent tissue to be seen through them. The third is the occasional staining of the mucous membrane, owing to the transudation of the blood through the coats of the vessels after death. With care, however, none of these circumstances will lead you astray.

The redness of the bronchi varies much both in degree and extent, and in some cases which have approached to the character of pneumonia rather than of bronchitis, is sometimes limited to the inflamed lobes. In cases, however, in which much bronchitis has existed, very marked redness generally begins about an inch above the bifurcation of the trachea, and pervades all the bronchi, being more intense in the secondary than in the primary tubes, and retaining nearly as great an intensity even in the tertiary branches. It may stop here, or it may extend even into the ultimate ramusculæ, or into the pulmonary cells themselves.

In the majority of cases no other change besides this intense redness is perceptible in the *mucous membrane*, but *sometimes it appears both thickened and softened*; and on one occasion in which a fatal attack of acute bronchitis supervened on a long continuance of the chronic stage of the disease, the bronchial mucous membrane was intensely red, and so thickened as to have an almost villous appearance, and closely to resemble red velvet. *Ulceration* of the mucous membrane of the trachea and larger bronchi, which is occasionally met with in the bronchitis of adults, I never observed but once. In that case, a little boy, twenty months old, who had suffered from a not very severe attack of bronchitis, in the course of which, however, he had had occasional difficulty in deglutition, with return of fluids by the nose, died rather suddenly. The only remarkable appearance besides a general redness of the bronchial tubes consisted in the presence of several small excavated ulcerations or erosions in the upper part of the larynx, just above the *cordæ vocales*.

Associated with the changes in the mucous membrane of the bronchi there is an *alteration* in the character of their secretion. At first, no doubt, this secretion is suppressed, just as we see that poured out by the Schneiderian membrane to be in a common cold; but afterwards it is poured out abundantly, and next ceases to present its natural characters of a glairy mucus, becoming

opaque, thick, puriform, or actually purulent, while in a few less common instances the secretion assumes the form and consistence of false membrane, constituting a true croup of the bronchi. Any traces of blood are but very seldom observed in the secretion, and the quantity of air-bubbles intermingled with it is usually in inverse proportion to the thickness of the secretion and its abundance.

But not only are the contents of the air-tubes altered in character, and for the most part increased in quantity, but the *tubes* themselves often undergo a marked alteration in their calibre, and become greatly dilated. This dilatation is usually observable from the secondary bronchi to the minutest air-tubes; the branches often being as large as the parent trunk, or even larger; but that fusiform dilatation which is met with in the adult has never come under my notice. On one occasion, however, in addition to a general cylindrical enlargement of the tubes, many of them presented a marked dilatation about half an inch from their termination; the tube expanding into a cavity big enough to hold half a nut. The interior of these cavities was not perfectly smooth and regular, but its thickened lining was in many parts thrown into folds or wrinkles. The case in which this appearance was observed was the one already mentioned, where the mucous membrane of the bronchi presented so extraordinary a degree of thickening.

Dilatation of the bronchi was once supposed to be the purely mechanical effect of the accumulation of the secretions within them. There is, however, no constant relation between the quantity of the liquids within the bronchi and the degree of their dilatation, and we must look to two other circumstances as being the primary causes of the occurrence. The first of these is the weakening of the muscular fibres of the bronchi by the inflammatory action; the other, the loss of the ciliary epithelium, which lines the air-tubes when in a state of health, and contributes by the incessant vibration of its cilia to keep them free for the access of air.

Whenever bronchitis has reached such an intensity as to give rise to the abundant pouring out of thick fluid into the air-tubes, so that the air can no longer permeate them with facility, while this difficulty is still further increased by the loss of the ciliary epithelium, and by the weakening of the contractile power of the bronchi, which would have helped to keep them free, it often happens that the feeble inspiratory power of the child becomes wholly inadequate to fill the lungs, large portions of them collapse, and bronchitis thus becomes the indirect cause of carnification of the lung.

In some cases, the inflammation of the respiratory mucous membrane extends further than usual along the smaller bronchi, until it involves their extremities and the pulmonary vesicles themselves, when it produces an appearance almost peculiar to childhood, and which has been described under the names of *vesicular pneumonia*, or *vesicular bronchitis*. A lung, or a portion of lung, thus affected, no longer contains any air—it is dark in colour, and feels tough, though solid; its surface is beset by a number of small, circular, yellow, slightly prominent spots, of the size of a millet-seed, or smaller; which on a hasty glance present a very great resemblance to crude tubercles. A very little attention, however, suffices to distinguish between them, for not only do these yellow spots differ from tubercle in their favourite seat being along the lower margins of the different lobes, but on puncturing any of them with the point of a scalpel, a drop of pus will exude, and the yellow spot will disappear. Sometimes, too, a minute bronchus may be traced, running to its termination in one of these little sacs. It has been suggested that this appearance may be due to the secretions formed in the air-tubes being forced by the column of air which enters in inspiration into the smaller bronchi and the pulmonary vesicles, the cavities of which thus become mechanically distended. The opinion that the secretions which occupy these parts are produced at the spot where they are discovered, by inflammation of the ultimate ramuscles of the bronchi, is, however, generally entertained, and is supported by very conclusive evidence. Bronchitis often exists unattended with this peculiar appearance; and on the other hand, vesicular bronchitis is met with independent of general inflammation of the air-tubes, while though usually partial, and often limited to the lower border of one or other lobe, it is sometimes very extensive, and occupies nearly the whole of the lower lobe on either side, constituting the most important of the morbid appearances discovered on examining the chest.

It may, and unquestionably often does, happen that children die of bronchitis alone, and without any notable affection of the pulmonary tissue. But it is much more frequent for the pulmonary substance to bear a part in the morbid process, and this share may either be limited to mere congestion, or may rise in degree until it produces all those consequences which we find attendant on inflammation of the tissue of the lung in the adult.

Some degree of *congestion of the lung* is almost constant if bronchitis be at all severe, for the circulation through the organ is disturbed, the blood flows less freely than na-

tural, and its changes take place more slowly. It stagnates first in those depending parts whence position renders its return most difficult, and the portions of lung thus affected become by degrees more and more extensive. Dark, solid, non-crepitant patches may often be seen in the midst of a lung thus congested; and until the results of inflation showed that a wrong interpretation had been given of the appearance, these patches were regarded as the centres whence the inflammation was extending to the surrounding tissue. You do not need to be reminded that they are lobules which have collapsed and become impervious to air; and portions of lung in which this occurrence has taken place seem to have but little disposition to become the seat of active inflammation, and to pass into a state of red or grey hepatization. At the same time, however, it must be borne in mind that this indisposition to active inflammation does not by any means amount to actual immunity from it; and that carnified lung may sometimes become softened, or even infiltrated with pus.

It does, however, happen now and then that the lung is found in a condition which may justly be called *lobular pneumonia*, as the result of the extension to the surrounding tissue of inflammation beginning in the air-tubes. Patches of lung will then be seen interspersed through the surrounding pulmonary tissue, of a vivid red colour, of various sizes, from that of a pea to that of an almond, irregular in shape, and not circumscribed exactly by the margins of lobules, as is the case with portions of carnified lung. This process going on in a number of different situations, the affected parts may at length coalesce, and a pneumonia, at first lobular, may thus eventually become generalized. Or, though this should not occur, the inflammation may yet go on in the isolated portions of lung to the infiltration of pus into its substance, or the actual destruction of its tissue, when a portion of the lung will appear riddled with small distinct abscesses, seldom larger than a pea, irregular in form, and communicating more less evidently with a minute air-tube. They may be distinguished from the vomica produced by softened tubercle, partly by the absence of tubercular deposits in other parts of the body, and by their being almost always limited to a single lobe of one lung. Their own characters, however, are sufficiently well marked, for they are altogether destitute of those solid walls which the tubercular deposit forms around a phthisical cavity; though the yellow lymph which often lines them may be mistaken by the inattentive observer for tubercle. MM. Rilliet and Barthez mention having found the pulmonary

substance healthy except in the immediate periphery of these abscesses, but no instance of this kind has come under my own observation; the pneumonia having in each instance become generalized.

The appearances we have hitherto been considering are due almost exclusively to inflammation of the air-tubes, and many of them are peculiar to infancy and childhood. We might next proceed to study the symptoms that betoken their existence, but, on the one hand, they seldom exist quite alone, and on the other hand, their symptoms present so many points of resemblance to those of pneumonia strictly so called, that it may be better to complete our survey of the morbid appearances that result from inflammation affecting either the air-tubes or the parenchyma of the lung, before we pass to the study of the symptoms that attend the one or the other during life.

The completion of this subject, however, must be postponed to the next lecture.

ON
CHEMISTRY AND THE MICROSCOPE
IN RELATION TO
PRACTICAL MEDICINE.

By GEORGE E. DAY, M.A. & L.M. Cantab.

Member of the Royal College of Physicians,
Lecturer on Animal Chemistry and Histology
at the Middlesex Hospital School, and
Physician to the Western General Dispensary.

LECTURE VI.

THE SUGARS.—*Cane-sugar—Grape or diabetic sugar—Sugar of milk or lactine—their composition—sources—distinctive properties as regards crystallization—solubility—their action on alkalies, and on hydrated oxide of copper—their difference in relation to fermentation—polarization.—Singular compound of grape-sugar and chloride of sodium.*

GENTLEMEN,—We proceed this morning to the consideration of the non-nitrogenous constituents of the animal body and its fluids. These are the sugars, fats, and certain acids.

SUGARS.

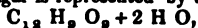
There are only two sugars that, strictly speaking, claim our attention, namely, the sugar occurring in the urine in diabetes, and the sugar that exists in the milk. I shall, however, also notice the ordinary cane-sugar, because it is important for you to be able to detect the difference between these several varieties. Thus, if you were unacquainted with the properties distinguishing

cane-sugar from the sugar of diabetes, I need hardly tell you how readily you might be deceived by a patient who had any object in imposing on you. I have known this imposition actually practised, and it is a singular fact that patients—for the most part women of a highly nervous or hysterical temperament, without the least apparent object beyond exciting the sympathy of their physician—are remarkably addicted to making the urine the medium of deception.

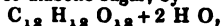
Their urinary organs, if we might give credit to their statements, are the most wonderful manufactories on the face of the earth—milk, powdered coal, fish-scales, finely-comminuted quartz, and brick-dust, being a few of the multifarious products developed therein.

But to return to the sugars: their composition is represented by the following formulæ:—

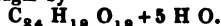
Cane-sugar is represented by the formula



Grape or diabetic sugar, by



Milk sugar by



Which correspond with the following numbers:—

	Cane-sugar.	Grape-sugar.	Milk-sugar.
Carbon	42.11	36.8	40.46
Hydrogen	6.37	7.0	6.61
Oxygen	51.52	56.2	52.93

Cane-sugar exists in great abundance in the sugar-cane, the beet-root, the maple, the carrot, and many other vegetables.

Grape-sugar is described by various writers as glucose, diabetic sugar, or starch-sugar. It is widely diffused over the vegetable kingdom: it exists in grapes and many other fruits, in honey, in the urine and other fluids in diabetes mellitus, and may readily be formed from the other sugars, woody fibre, starch, &c.

Milk-sugar, sugar of milk, or lactine, exists normally only in the fluid from which it derives its name. Prout once found it in the liquor amnii of a cow, but this is the only instance in which it has been detected in that fluid. It has recently been found in considerable quantity in eggs after the process of incubation has gone on for some time. Koller has recorded a case in which it was contained in a milky-looking fluid removed from between the tunics of the testicle; and it has been found in a milky fluid escaping from an abscess in the thigh of a woman who was suckling—(Simon, vol. ii. p. 521).

I shall now endeavour to shew you the distinctive points existing between these three different sorts of sugar.

They present well-marked peculiarities in their modes and forms of crystallization. I have endeavoured to make these forms intelligible to you, in diagrams 20—23.

FIG. 20.

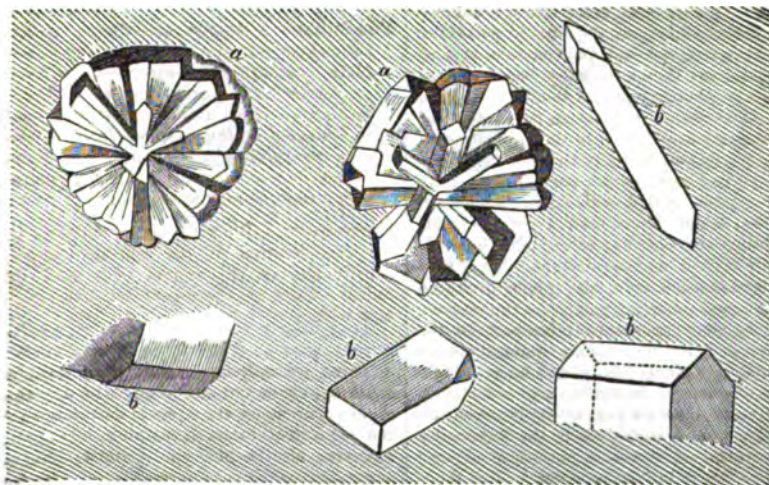


FIG. 20.—*a*, Crystals of cane-sugar magnified 44 diameters; *b*, separate crystals magnified 90 diameters—(Vogel).

FIG. 21.



FIG. 22.

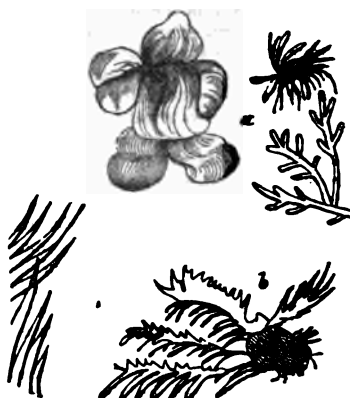


FIG. 21.—A, Grape-sugar slowly crystallized from an aqueous solution at a low temperature. B, The same from a spirituous solution—(Hoffmann).

FIG. 22.—a, Sugar of milk crystallized from a cold aqueous solution. b, the same from a warm spirituous solution—(Hoffmann).

FIG. 23.



FIG. 23.—a, Perfect crystals of sugar of milk, apparently of the clinorhombic system, magnified 220 diameters. b, Acicular crystals, forming tuft-like or feathery groups, such as occur on drying

very dilute solutions of sugar of milk; magnified 220 diameters. c and d are larger crystals, obtained by the slow evaporation of a concentrated solution; magnified 44 diameters—(Vogel).

They differ considerably in their degrees of solubility. While cane-sugar dissolves in a third of its weight of cold water, grape-sugar requires one and a half times its weight, and sugar of milk six times its weight of cold water. Alcohol is a better solvent for grape-sugar than for the other varieties: while sugar of milk is insoluble in that menstruum, and cane-sugar nearly so, sugar of grapes dissolves in 5 parts of spirit, and in 20 of absolute alcohol at a temperature of 77°.

They differ in their action on various substances used as tests for sugar in diabetic urine or other fluids. Thus, if we boil a solution of grape or milk-sugar with a solution of caustic potash or lime, an orange or brown bistre-like tint, varying in depth according to the amount of sugar that is present, is developed, but with cane-sugar little or no change is perceptible. In the practical application of this test to diabetic urine, it is expedient to add to the suspected fluid at least an equal volume of liquor

*potasse**. A drachm, or a drachm and a half of the former, mixed with an equal volume of the latter, should be boiled for two or three minutes in a rather large test-tube over the flame of a spirit-lamp. This is frequently known as Moore's test. I believe it to be perfectly free from any fallacy, having examined considerably more than two hundred specimens of urine, in health and in various diseases, without observing the change in question; while in those cases in which the reaction manifested itself I have always detected sugar by other means. I may add that if any further confirmation of the test be required, on the addition of a few drops of nitric acid to the hot mixture a peculiar syrupy odour is developed. If cane-sugar be boiled with a small quantity of an organic or a dilute mineral acid, it becomes converted into grape-sugar, and will then be amenable to this test, but not otherwise; and the same remark equally applies to the next test we have to notice, namely, Trommer's test.

Trommer's test is founded on the principle that grape and milk sugar possess the property of reducing oxide of copper, as well as certain other oxides, to a lower stage of oxidation. The ordinary method of applying this test is to add to the urine, or other fluid suspected to contain sugar, just enough of a solution of sulphate of copper to communicate to it a faint blue tint. Liquor potassæ must then be added till the mixture has a decidedly alkaline reaction. The object of this addition is to remove the sulphuric acid from the oxide of copper, which is thus liberated as a hydrate. If sugar is present, and a sufficient quantity of potash has been added, the hydrated oxide of copper dissolves, forming a blue solution somewhat like ammoniuret of copper; and, on heating the mixture, an ochre-yellow or reddish brown precipitate of sub-oxide takes place as soon as ebullition begins. If sugar is not present, the copper is deposited in the form of black oxide. For this reason, it is expedient that no more sulphate of copper should be used than is sufficient to afford a decided precipitate on the addition of the liquor potassæ; for, unless a very large amount of sugar be present, a portion only of the black oxide will be reduced to red oxide, and the indications afforded by the test will thus be rendered indistinct. According to Mitscherlich, we may thus detect one part of sugar in 1,000,000 of a fluid

mixture. I have recently simplified the application of this test by preparing a solution of tartrate of copper in liquor potassæ, thus saving the necessity for two separate tests—sulphate of potash and liquor potassæ. No precipitate is formed till the application of heat, when the above-described change takes place.

Trommer's test has been applied successfully as a means of determining the quantity of sugar in a fluid; but we have better means at our command, which I shall presently mention. I ought to remind you, before leaving the consideration of this test, that very prolonged ebullition will convert cane into grape sugar.

A further point for our consideration is in relation to the powers of fermentation possessed by the different sugars. Cane sugar is, strictly speaking, unfermentable; but, in contact with a ferment, it is soon changed into grape sugar, which rapidly undergoes the process of fermentation, being converted into carbonic acid gas and alcohol. Sugar of milk is susceptible of fermentation, and it is from this property of it that the Tartars and other nations are enabled to prepare an intoxicating liquor from milk. It is, however, most probable that, like cane sugar, it is first converted into grape sugar. At all events, milk does not ferment until an acid has been formed in it, which acid converts sugar of milk into that of grapes.

When a little yeast is added to healthy urine, exposed to a temperature of about 80°, no change occurs for some time, except the development of a portion of carbonic acid mechanically entangled in the yeast. If, however, sugar be present, the urine soon becomes troubled, a tolerably free disengagement of bubbles of carbonic acid takes place, and a frothy scum forms on the surface of the fluid, which evolves a vinous odour. These changes take place with great rapidity, even when the quantity of sugar is very small. If the evolved carbonic acid is collected in a graduated jar over mercury, the quantity of sugar may be determined, as a cubic inch of the gas very closely corresponds with a grain of sugar.*

In the absence of a mercurial trough, (a piece of apparatus of comparatively rare occurrence, except in chemical laboratories,) the carbonic acid may be determined by the increase of weight of a Liebig's bulb-apparatus, charged with a solution of potash.†

* In my Introduction to Simon's Chemistry the proportions I recommended were one part of liquor potassæ to two of the suspected fluid. I have since then met with several cases in which that proportion did not succeed in developing the change of tint nearly so well as that now recommended. A very considerable excess of potash appears in no way detrimental to the action of the test.

* Accurately speaking, 100 cubic inches of carbonic acid gas correspond with 106·6 grains of sugar; and further, a comparative experiment should be made with an equal bulk of the same yeast, diluted to the same extent with pure water.

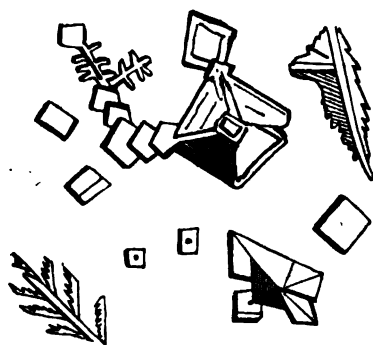
† I deem it unnecessary to enter into the minor details regarding the processes of manipulation in such cases as these: with a fair elementary knowledge of chemistry, the student will expe-

Bouchardat states that the fermentation test never gives accurate results, in consequence of a portion of the sugar being converted into lactic acid.

There is one point connected with fermentation to which I must still call your attention: I refer to the development of a minute fungus in fluids in which fermentation is commencing. If urine containing the smallest proportion of sugar be exposed for a few hours to a temperature above 70°, and a drop taken from the surface be examined under the microscope, numerous very minute ovoid particles will be discovered; in the course of a few hours more they become enlarged, and appear as distinct oval vesicles. For a full description and a figure of this plant I must refer you to the chapter on *Psoralea*, in Vogel's "Pathological Anatomy of the Human Body." Vogel very truly observes, that these fungi do not possess any peculiar pathological value; at most they only serve to shew that fermenting substances have been conveyed into the organism, so that the animal fluids contain elements susceptible of fermentation. In this manner we may infer that a specimen of urine in which they occur contains sugar, but their presence in this fluid is far from a safe indication of a saccharine condition, for he states that he has often observed fungi more or less closely resembling this plant in urine which contained no sugar.

I deem it unnecessary to do more than refer to the test afforded by the rotatory power of a solution of sugar on a ray of polarized light, as there are practical difficulties in its application which must probably ever prevent it from becoming of general use.

FIG. 24.



Equal parts of grape-sugar and chloride of sodium. (Hoffmann.)

rience no great difficulty in finding for himself, with the apparatus in his possession, the best course to pursue; without that elementary knowledge all rules and instructions would be thrown away upon him.

There is a compound of grape-sugar and chloride of sodium, to which I would call your attention. On saturating diabetic urine with common salt, and leaving it to spontaneous evaporation, crystals three-fourths of an inch in diameter may be obtained; they are shown in fig. 24.

Lehmann asserts that he can always detect diabetic urine by evaporating a few drops on a slip of glass, and observing the peculiarities in the form of the crystals of this compound.

Original Communications.

ON

MORBID SYMPATHIES;

OR THOSE ASSOCIATED STATES OF DISORDER WHICH MOST FREQUENTLY PRESENT THEMSELVES TO THE PHYSICIAN.

Being the Croonian Lectures delivered at the Royal College of Physicians in March and April, 1846.

BY JAMES COPLAND, M.D. F.R.S. &c.

[Concluded from p. 845.]

THE next class of sympathies to which I would direct attention is that which may be denominated *sympathies of sensation and sensibility, or associated states of morbid sensation and sensibility*. After my endeavours to point out the intimate association of the ganglial with the spinal nerves and nerves of sense, it will be unnecessary to revert to the channel of communication in the associated affections of this class. It is only requisite to notice certain of these associations. Owing to the intimate connection of the fifth pair of nerves with the nerves of sense—with the optic, lingual, auditory, and olfactory nerves,—a change affecting the roots or trunk, or even the ramifications of the fifth pair of nerves, to a certain extent impairs one or more of the senses on that side on which this nerve may be affected or implicated. Thus, in the case of tumor or abscess pressing upon the gangliated portion of the fifth pair of nerves, not only is the sensibility of the surface affected, but also the circulation and secretions of the organs of sense on that side are either disordered or impaired. Inflammation of the conjunctiva readily supervenes, and the

senses of smell and taste are affected, partly in consequence of diminished secretion from the surfaces of their respective organs.

All the functions of sense are more or less affected, not only by disease implicating associated nerves, or parts from which the nerves take their origin, but often also by disease in distant situations. Even depressed energy of the organic nervous system generally, and especially of those parts of it which preside over digestion and assimilation, impairs the functions of sense. This association of remote organs—this unity of the frame—is displayed not only by one class of functions, but by all the manifestations of life in the different organs constituting the individual living being. I need not advert even to the association of morbid sensibility of different parts of the cerebro-spinal nervous system. We are all aware that, when irritation exists at the origins of nerves, it is not there that we may expect to find sensibility principally affected. When the irritation even is greatest at the roots of the nerves, little or no pain or alteration of sensibility may exist there: it will be felt chiefly at the sentient extremities of those nerves. This is manifested by *tic douloureux*, in which the morbid condition exists near the base of the brain, or is connected with the *dura mater*, or is caused by exostosis of some portion of the bones of the cranium. There may be merely pressure, or the irritation caused by ossific deposits, but the morbid change is evinced principally at the sentient extremities of the nerves.

The same circumstance obtains with regard to the spine. In cases where the individual may not suffer the least uneasiness in the seat of pressure, or in any part of the spine, yet there may be extreme pain in the surface of some part supplied by nerves from that portion of the spinal cord which is implicated in the existing irritation or other change. Although the patient may not feel pain in the part especially affected, yet he may be suffering under inflammatory irritation or congestion, or other organic changes implicating the spinal cord and membranes or the roots of the nerves. The suffering experienced in the extremities in gouty persons is not always owing to changes in the extremities only, but partly also

to congestion of the venous sinuses of the spine; and the partial palsy of the extremities, especially the lower, generally passing on to complete palsy, arises often from congestion of these sinuses, followed by effusion, or other organic changes. These are facts which I have had occasion to verify in several instances by inspection after death. When the change implicating the cord, its membranes, or origins of the nerves, is such as to irritate, excite, or similarly affect these parts, pain is usually manifested in the extremities of the corresponding nerves, and sometimes also by other nerves more or less intimately connected with them; but when the primary change goes on to the production of pressure, or to the destruction of parts, then loss of function, impaired sensibility, or difficult or impaired motion, or a combination of these, supervene, and increase with the augmenting organic change.

Not only may irritation or pressure at or near the origins or roots of the nerves of sense and of motion affect the senses, the sensibility, and the motions, even to the remotest parts, but irritation originating in or affecting the ganglial nerves will produce serious disorder not only in the seat of irritation, but also in most distant places, which places will often evince the chief disturbance either in respect of their sensibility or their movements, or both. These occurrences are not infrequently verified by post-mortem examinations; the existing lesion being sometimes found in parts which evinced but little or no disorder during life, the severity of the sympathetic affection having masked the original mischief, or having attracted the entire attention of both patient and physician. The irritation produced by a calculus in the kidney,—by sabulous matter in the tubuli of the organ,—will often produce disturbance of the organs supplied with nerves from the ganglion and organic nervous plexuses of the organ, extending even to the associated ganglia; will disorder not only the urinary functions generally, but also will affect the digestive organs, occasioning nausea, vomiting, constipation, colicky pains, &c.; and the extent of disorder is sometimes even not so limited, but still further extended. By means of the branches or fibrils of ganglial nerves proceeding

from the renal ganglion to the roots of the spinal nerves, and even to the cord itself, as well as by means of spinal nerves proceeding to the sympathetic nerves and ganglia, a sympathetic affection—one consisting chiefly of pain, or morbid sensibility of a painful kind—is sometimes also experienced in various parts of the external surface; or, in the course of some nerve, as it ascends to the shoulder or arm of that side, or more frequently down the lower extremity: occasionally with a peculiar numbness, or imperfection of the movements. I have had opportunities of observing such cases, in some of which the pain was as severe as in neuralgia; where also the cause was suspected during life, and no appropriate treatment adopted. In two recent instances where an examination was made after death, large calculi were found in the kidney. Irritations of the ovary or uterus, as will be noticed hereafter, develop even a still wider range of sympathies.

There is another class of associated morbid conditions, which may be denominated *associated disorders of animal motion*. These are of great importance, and present the same relations as have now been pointed out; but I can only imperfectly advert to them on this occasion. Many disorders, even several that are seated in the abdominal cavity, may affect the locomotive functions; of this we observe daily proofs. An accumulation of fecal matters, or the presence of morbid matters or of worms, in the intestinal canal, irritates the ganglionic nerves, and the irritation is propagated to the roots of the spinal nerves, or even to the spinal cord itself, and is thence reflected by these nerves to the voluntary muscles, to the extremities, or to the external surface. In this way chorea, infantile convulsions, and various symptomatic disorders implicating the muscles of voluntary motion, often of an anomalous character, alterations of sensibility on the surface and in the extremities, various affections of the organs of sense, and many of the phenomena observed in cases of intestinal and gastric disease, are frequently developed.

There are various, indeed numerous, sympathies or associated morbid states indicated in the *synopsis* or *classification* of the topics comprised in the very

extensive subject attempted to be discussed in these lectures, but I must content myself with the mere indication thus afforded. The pathologist will readily recognize the importance of most of them, and the practitioner will readily furnish illustrations of them from his own experience. One of the chief objects I have had in view was to point out the principal channels of sympathy, or the media by which disorders became associated or complicated; these channels or media having been recognized, the resulting phenomena, as actually occurring in practice, may more readily be referred to their sources, although they are too various and numerous to be adduced and illustrated in the time to which I am limited. Passing over, therefore, some of the subordinate orders of sympathies which may be ranked under the preceding classes, I shall conclude with the brief consideration of a class of sympathies to which sufficient importance has not always been attached, and which, indeed, has not always been rightly interpreted or understood.

The sympathies evolved by the reproductive organs do not appear until the period of approaching or fully-developed puberty. The influence of these organs upon the œconomy is evinced at this period by the more rapid growth of the whole body; by the more complete development of all the structures and organs, and of all the manifestations of mind at and after this important epoch; and this evolution of the physical and mental constitution of the individual is the more perfect and complete, when, circumstances being favourable in all other respects, these organs have not been prematurely excited, exhausted, or abused; for accurate observation will confirm the position, that abuse, premature excitement of these organs, or excess of such excitement, will diminish or weaken the growth of the body, or impair the energy of both the organic and the cerebro-spinal nervous systems; and, with other injurious effects, often carried to an alarming extent, will impair, or even altogether destroy the chief manifestations of mind, and develop several constitutional maladies and numerous special diseases, with their still more numerous sympathetic associations. But the mischief is not limited to the delinquent alone, but extends to the offspring of him or her

who has indulged in the vices to which reference is now especially directed—if, indeed, such creatures be capable of reproducing their species. If this power be still retained, it is generally manifested weakly, imperfectly, and insufficiently, as regards the constitution, physical and moral, of the offspring.

Whilst the perfection of mental and bodily function, as well as of corporeal development, thus results from the full evolution of the sexual organs, or from the reciprocal influence exerted between them and the nervous systems, numerous disorders, evincing more or less extensive sympathies and associations, are produced by the cause now alluded to. The exhaustion thereby caused affects not one organ merely, but the whole frame. This generally extended sympathy—this universally diffused state of disorder—is to be explained partly by the influence of exhaustion, and partly by the excessive excretion of a recrementitious fluid—of a secretion intended not merely for the perpetuation of the species, but also for the development of the structures, and of the nervous power of the individual. This functional abuse extends its consequences thus generally through the medium of both the organic and the cerebro-spinal nervous systems, which influence the functions of digestion, assimilation, sensation, sensibility, and muscular motion; and hence all these functions not merely languish, but also betray, in varying forms and associations, numerous sympathetic and associated disorders,—increased susceptibility of impressions, morbidly increased irritability; whilst power, endurance, and vital resistance, are diminished. Impaired assimilation and nutrition are also among the usual results, even when no particular or specific form of disease is developed. Ultimately the organs thus prematurely or inordinately excited, either have their functions entirely exhausted, or assume an increased susceptibility of irritation, and are the seats either of very frequent or of constant irritation, whence numerous sympathies irradiate. The state of one of these organs extends to all: that of the ovaria affects the uterus and the mammae, or that of the latter extends to the former. The irritation of either of these organs extends through the medium of the ganglial nervous

system, to the urinary organs, to the digestive canal, and to the secreting and excreting organs generally. Thus we perceive disorders of the secretion or excretion of urine; flatulence, borborygmi, the globus hystericus, with other disorders of the bowels and stomach, and even interruptions of the cutaneous, biliary, and intestinal secretions and excretions. These disorders are almost universally experienced in these circumstances; and as the irritation of the sexual organs increases either in duration or intensity, or as the causes which occasion the irritation are persisted in, the sympathetic disturbances advance still further and more generally, by means of the nervous communications already described, and ultimately, in consequence of superinduced alterations of the vascular system and circulating fluids, they are manifested in numerous modes in distant parts of the economy. The individual who has thus devoted himself or herself—it may be said to the infernal gods—soon afterwards, and owing to the sympathy manifested by the ganglial system, complains of palpitations or irregularities of the heart's action, of shortness of breathing, of indigestion or morbid states of the appetite, and of various anomalous pains or alterations of sensibility in different parts of the body. Owing to the connexions subsisting between the organic nervous system, the spinal nerves and cord, and the brain and nerves of sense, and owing to the association of the ganglial and spinal nerves in the organization of the reproductive organs, disorder in various forms is extended to, or is manifested by, the organs of sense, and the muscular and tendinous structures. Volition is often languidly or imperfectly transmitted by the voluntary nerves; the muscles become more and more unable to execute the weak or inadequate volitions; the fibrous and tendinous structures evince impaired vital tone, whilst sensibility and irritability present various aberrations. In conjunction often with these, or more or less independently of some of them, various congestions in different places, either in succession or coetaneously, or irregular distributions or determinations of blood take place, and either heighten preceding ailments or develop novel forms or combinations of

disorder. Congestions of the venous sinuses of the spinal column frequently occur and disorder the urinary functions, or affect the sensibility or movements of the extremities, especially the lower extremities, producing partial or even complete palsy, either of sensation or of motion, most frequently of the latter. The irritation existing in the primary seat of disorder is often propagated to the roots of the spinal nerves or to the chord itself, and is thence reflected upon the surface of the body, or in the extremities, in the form of neuralgia or in other states of altered sensibility, or in various forms of hysterical spasm, convulsion, or disorders of motion. The senses, especially sight, hearing, and touch, are variously obscured or modified, and the mind becomes more or less disordered. The individual whose organic and mental energies have become weakened by the causes alluded to, is envious of those who possess powers which he either never had or has lost; is censorious, indulges in scandal or in the depreciation of others; is mean, spiteful, or sanctimonious; or he becomes the subject of some variety of partial, or even of general insanity.

The most dangerous and advanced maladies resulting from the morbid condition referred to—the most serious and complicated mischief thus produced, varies with the constitution, predisposition, and concurring circumstances of the individual. In many asthmatic or pulmonary affections, tubercular consumption, and tubercular formations in different organs; in others, various forms of insanity; in some, organic disease of the heart; and in some, structural change in the brain or its membranes, occasioning epilepsy, palsy, &c. are the more remote consequences. Indeed, almost every form of special disease may be simulated, and actually produced, especially when aided by concurring causes, when irritation of the reproductive organs is either frequently repeated or inordinately perpetrated. At first numerous functional disorders are developed, which are continually changing their aspects and their associations, and are continually varying in severity and character. Subsequently, and as these are neglected, or as the original morbid condition in-

creases, disorders which were formerly functional become ultimately organic or structural, in consequence of the influence which disordered states of organic or cerebro-spinal nervous influence exert upon the vascular actions, upon the assimilating and nutrient functions, and upon the several secreting and excreting organs.

Having thus attempted to direct your attention to the sympathetic relations of disease, and to the channels through which diseases become associated or complicated—my time, however, obliging me to leave many topics connected with the subject altogether untouched—I wish to impress upon you the advantages to be derived in practice, from tracing, as accurately as possible, the bonds of connection which associate or complicate the more specific and primary states of disease, and render morbid phenomena often difficult of interpretation, and as often difficult of removal. Having ascertained as accurately as possible the primary source of disorder, having traced the succession as well as relations of morbid manifestations, and the connection of the whole with antecedent and existing causes; having, moreover, considered the probable extent of nervous disorder and of vascular disease, and of alteration or contamination of the circulating fluids, a rational basis is thereby formed for therapeutical indications and remedial measures; and, as respects both the general intentions and the particular means, will be appropriately and successfully employed.

I believe that the physician who thus enters on the study of each case which comes before him, and endeavours to connect the effects presented to his view with their causes, and to trace the bonds of union subsisting between those frequently distant effects, will generally exercise his profession successfully; for, being acquainted, as he will undoubtedly be, with the nature and operation of the remedies he employs, he will apply them appropriately to the removal of those morbid conditions which he rationally infers to be present. A physician whose mind is thus tutored and practically engaged, will be neither sceptical of the effects of medicine on the one hand, nor empirical and rash in the use of it on the other. His extensive and

practical knowledge being always appropriately applied, will prevent him from lapsing into a scepticism which, when entertained by any member of our profession, is not degrading to the profession itself—for truth and honour cannot be degraded—but which is most degrading to the sceptic himself, inasmuch as he admits himself to be deluding the public, whilst he boasts that he is not himself deluded, and thus vaunts his own dishonesty. Neither will the enlightened and rational physician lapse into a state of blind empiricism, and wield the weapons employed against disease in such a manner as will not only endanger the life of the patient, but also injure his own reputation.

Mr. President, I have only to regret the imperfections of these lectures. I was anxious to entertain the subject which I have attempted to discuss, because it has hitherto failed of obtaining an attention in any way commensurate with its importance, although I knew the number of lectures to which I was confined could not admit of justice being done to it. The observations, therefore, which I have offered will, I hope, be viewed as *suggestive* only, especially in respect of various subordinate topics, for as time did not allow me to illustrate, I could suggest merely; and I hope that the imperfections of my performance will be ascribed in part to the difficult, abstruse, and complicated nature of the subject.

CASES OF ANEURISM OF THE AORTA,

WITH REMARKS.

By CHARLES J. HARE, M.D. Cantab.
Physician to the St. Marylebone General
Dispensary.

[Concluded from page 797.]

Examination, 40 hours after death.
—There was a moderate amount of fat under the integuments. Colour of skin natural. The legs were very much swollen, and the swelling was rather firm under pressure; pitting therefore but little: there was some œdema about the hips and pubes. Very slight cadaveric rigidity examined. The muscles were of a

darker colour than is usual. The skin separated very readily from the muscles, and the muscles of the abdomen from the peritoneum. On dividing the mammary veins near the first rib after turning back the sternum, an exceedingly large amount of dark-coloured very fluid blood escaped from them; in appearance very similar to port-wine, and perfectly free from any clots. There were adhesions of an old character between the costal and pulmonary portions of the pleurae on both sides of the chest; the lungs were in this manner adherent anteriorly, laterally, and posteriorly, as also to the pericardium, which was more than usually covered by the left lung: the adhesions, however, though numerous, were not exceedingly strong. The lungs were of a dark purplish colour, and much congested, but did not present any appearances of inflammation; they were somewhat emphysematous, the vesicles being almost everywhere sufficiently large to be *distinctly* visible, but nowhere very much dilated, though they were decidedly larger at the edges of the lungs than in other parts. The trachea was at one part slightly flattened by the pressure of the aorta, but no absorption of its substance had taken place. The pericardium, though partially hid by the emphysematous lung, was at once seen to be very much larger than natural; there were no adhesions between it and the heart; its lining membrane was natural in appearance, quite smooth, and perfectly free from any white patches; it did not contain above a drachm of fluid. The heart was likewise free from white patches, of natural texture, but very much enlarged: the following were its dimensions externally:—

Length from the right
auricle to the apex . 7½ inches.
Length from the com-
mencement of the aorta
to the apex . . . 5½ "
Circumference of the base 12 "
The measurements of the *left ven-*
tricle were,—
From the aortic valves to
the apex (internally) . 4½ inches.
Mitral orifice, circumfe-
rence of . . . 3½ "
Aortic orifice " " 2½ "
Average thickness of walls ⅔ inch;
in one part ⅔; at the apex ⅔.

The lining membrane of this ventricle was semi-opaque and white, but presented no traces of recent inflammation. The mitral valve was very opaque, and slightly thickened, but appeared to act perfectly well; there were no vegetations upon it. The aortic valves were also very opaque and white, and were considerably thickened at the edges, which were slightly rough: these valves were somewhat inelastic, and when closed by a column of water injected into the aorta, still left a small triangular orifice between their free borders, so as to have admitted during life of at least some regurgitation of the blood.

The average thickness of the *left auricle* was $\frac{1}{8}$ of an inch, but near the auricle it amounted to $\frac{1}{4}$ of an inch; the auricle itself was rather large, and its lining membrane thickened, and so exceedingly white as to look very much like a coat of white paint laid over the interior of the cavity.

Right ventricle.

Length $4\frac{1}{4}$ inches.

Tricuspid orifice, circumference 4 "

Pulmonary orifice 3 "

Average thickness of walls $\frac{1}{4}$ inch, but they varied from $\frac{1}{8}$ to $\frac{3}{8}$ of an inch.

The tricuspid valves were slightly opaque and thickened at their free edges, but were not hard, and they acted well. The pulmonary valves were healthy. The *right auricle* was, like the left one, enlarged, but its endocardium was only very little whiter than natural: its walls measured in all its parts one-eighth of an inch in thickness. The consistence of the heart was natural; all its cavities were perfectly empty of blood and free from any clots: scarcely any blood, indeed, was found in any of the veins of the trunk, for they seemed to have been emptied by the very large quantity which, as already stated, escaped when the sternum was removed.

The *arch of the aorta*, especially its ascending portion, was very much dilated; when opened, it measured—

	Inches across.
Just above its orifice	$3\frac{1}{4}$
At one inch from ditto	$4\frac{1}{2}$
At $1\frac{1}{2}$ inch from ditto, and to where it gave off the innominate	$5\frac{1}{2}$
After giving off the left carotid	$4\frac{1}{2}$

After giving off the left subclavian $3\frac{1}{4}$

Beyond which point it assumed its natural calibre. Its inner surface was extremely rough with atheromatous and ossific deposits; the ossific matter was most abundant in the ascending aorta, and at the commencement of its arch, but some was found in the lower part of the thoracic, and even in the abdominal aorta: in these parts, however, there was more of the atheromatous matter in different stages. The coronary arteries were somewhat ossified near their commencement, and the size of their orifices was considerably diminished—that of one of them being with difficulty discoverable. The left carotid arose close to the innominate. The portion of the pericardium which encircles the aorta had, in consequence of the dilatation of this vessel near its commencement, been carried upwards to a distance of two inches and three-quarters from the base of the heart, so that the dilatation of the aorta to this length was completely within the pericardium. The *pulmonary artery* was three inches and a quarter in circumference.

There were several old adhesions between the superior surface of the liver and the diaphragm. The liver itself projected a little below the border of the ribs, but was only slightly enlarged; its substance broke down somewhat too readily on pressure: it was of a very dark purplish colour, and the blood which it contained was extremely fluid: it presented a good specimen of portal congestion. Both kidneys were rather large, and of a similar purple colour to the liver; their structure natural, but on the surface of each one there were several very small cysts. The capsules came off readily. The spleen was very dark-coloured, and somewhat enlarged, but not otherwise diseased. The ovaries small.

REMARKS.—In the first of the above cases, on examining the chest, there could be no difficulty in the diagnosis as regards the aneurism: the pulsating tumor was of such a size that it could not have existed in the situation which it occupied, without having previously caused the absorption of a portion of the right border of the sternum between the articulations of the cartilages of

the first and second ribs. The tumor and the parts around it were perfectly dull on percussion; the pulsations were exceedingly strong, and, when the stethoscope was applied, raised the head forcibly at each beat of the heart: they were also very sharp and superficial, and, when the fingers were placed on the tumor, gave the idea of but a thin layer of substance intervening between them and the current of the blood. No bellows or rasping sound—no murmur whatever—was audible over the seat of pulsation, but there was a sound similar to, though louder than, the first sound of the heart: no second sound was distinguishable. The absence of a bellows, rasping, or other similar sound, in aneurisms of the aorta, whether situated in the thorax or abdomen, is by no means so uncommon as is frequently supposed: it sometimes happens, indeed, that a rasping sound may be present at one period and afterwards disappear in the progress of the case, especially in sacculated aneurisms, and such *may* have been the case in this instance, but certainly none was present at any time while the case was under my care. I believe that such sounds are proportionably less frequently absent in instances of dilatation of the aorta, such as was presented in the second of the above cases, than in other forms of aneurism of that vessel.

Amongst the symptoms referable to the aneurism, there were several of a very interesting character. Of these, two of the most obvious were the difficulty in deglutition, and the peculiar character of the voice and cough: with the former of these he was first troubled about two months before I saw him, but it was not a constant symptom, and at times was much more severe than at others; at first he merely rejected some of the food he was swallowing, but afterwards, on two occasions previous to my seeing him, he had been nearly choked by some of the morsels of food he was swallowing, and which it was with great difficulty he could either pass or reject. On the 12th of May, this dysphagia, which had the day before been very considerable, became so great that he could not swallow at all—not even liquids, which he had never previously had difficulty

in taking, and on the 13th, when I was sent for, this symptom was also accompanied with dyspnoea and some lividity of the face and hands: it was evident that these symptoms depended upon the pressure of the aneurism on the œsophagus and trachea, and they were so urgent that I ordered him to be bled to a small amount in the upright position, so that the greatest effect might be produced with the least possible loss of blood: not more than three ounces had been taken before he became faint, and *immediately* after recovering from this state, he was able to swallow. The hoarse, croaking character of the voice might arise from circumstances dependent either upon the aneurism or connected with the tuberculous disease of the lungs; in some cases it is caused solely by the size and position of an aneurism being such as to compress or flatten, more or less, the trachea. A similar tone of the voice might be produced by the pressure of an aneurism or other tumor upon either of, or both, the inferior laryngeal nerves, causing partial paralysis of them, and thus necessarily affecting the glottis; as, according to the experiments of Reid and others, the inferior laryngeal is the motor nerve of the larynx, it having been found that injury to it puts an end to the formation of vocal sounds, while if the nerve on each side be divided, the loss of voice is complete. On the other hand, a very common complication of phthisis is ulceration of the mucous membrane of the larynx, causing much hoarseness, and sometimes almost complete aphonia. Now, in the present instance, the post-mortem examination revealed conditions which were sufficient to account for the peculiarity of the voice and cough in each of these different ways, for (1st.) the trachea was not only compressed by the aneurism, but this had caused in one place partial absorption of its coats; (2d.) the small aneurismal pouch which projected from the under surface of the dilated aorta was so placed as to press directly upon the left recurrent laryngeal nerve, and (3d.) well-marked ulceration of one of the chordæ vocales was found, besides general thickening of the mucous membrane of the larynx: it is perhaps difficult, therefore, in this instance, to

determine exactly to which of these causes the peculiar character of the voice was due, or how much of it depended on each of them, but I think it may fairly be assumed that it was not entirely owing to the ulceration of the mucous membrane of the larynx, because, although the phthisis gradually advanced, and was ultimately the cause of his death, the voice assumed a much more natural character in proportion as the aneurismal sac diminished in size; and one may, therefore, most probably be justified in considering the former as an event dependent upon, and, in fact, a consequence of, the latter circumstance.

His most easy position when in bed was on the left side with the body somewhat raised. I remember another case, where an exceedingly large aneurism of the aorta had made its way through the ribs to the right of the sternum, in which the same position was always preferred; and this arises, doubtless, from the pain and uneasiness caused by pressure directly upon the aneurismal sac itself when the person rests on the right side; for it might naturally be supposed that the *breathing* would be easier if the patient were in such cases to lie on the right side, because the left lung—the one the least interfered with by the pressure of the tumor, and the more useful one, therefore, for respiration, supposing them to be otherwise equally healthy—would, in such a position, be better able to expand than if the patient were to lie upon the left side; for the same reason exactly that in cases of pleurisy resulting in considerable effusion into one side, the patient, if no pain remain to prevent his doing so, usually lies on the affected side, so as to give fuller play to the more healthy lung. When sitting or standing up, or when lying on the left side or on the back, he suffered scarcely any pain in the region of the tumor, but experienced a sensation of fulness there: the principal pain which he at any time complained of was in the right shoulder and about the scapula, doubtless from irritation transmitted to the brachial from the cardiac plexus, which must necessarily have been compressed by the dilatation of the aorta itself, if not by the aneurismal sac. There was scarcely any difference perceptible between the pulse at the two wrists,

(if anything the left was the smaller,) but a very marked difference existed in the force of the pulsation of the two carotids: this difference accorded well with the appearance of the parts after death, for the pressure of the aneurismal tumor had pushed the left common carotid far too much to the left side, and had compressed its mouth where it opens into the aorta into the form of an ellipsis, which, together with the ossific deposits around that part, must greatly have diminished the amount and force of the blood entering that artery, while the left subclavian being situated farther to the left side, had escaped being pressed upon by the aneurism. Hence, had not percussion and auscultation afforded still stronger proofs of the fact, it might have been inferred from a consideration of the above symptoms that the aneurism extended so much to the left as to encroach upon the carotid without interfering with the subclavian artery. The rapidity of the pulse, which varied from 95 to 132 per minute, was ascribable to the tubercular disease of the lungs.

An interesting and important circumstance connected with the aneurism was the manifest tendency towards cure, evidenced both by the physical signs and the symptoms during life, and by the appearances found after death. On the 29th of April—within a fortnight of my first seeing him—I observed that the tumor had diminished in size, and that the impulse, both as felt by the fingers and through the medium of the stethoscope, was manifestly less strong than it had previously been: the current of blood appeared to be at a greater distance than before from the ends of the fingers applied to the tumor. This diminution in the size of the aneurismal swelling became gradually more manifest (as remarked in the subsequent notes of the case) till, on the 12th of August, the pulsations were barely visible, the tumor was very much less prominent than it had been, and its base was considerably diminished in diameter; and before his death there was proof of a still further decrease in the size of the aneurism. Coincident with these physical signs of diminution in the size of the aneurism, the symptoms dependent upon its pressure on surrounding parts also de-

creased, for the voice assumed a much more natural character, the difficulty in deglutition almost disappeared, and, notwithstanding the progress of the phthisis, the dyspnoea became less. The œdema of the left arm, which commenced three weeks before death, might at first sight have been ascribed to some increase in the size of the tumor taking place at that time, and causing greater pressure than before on the left vena innominata or the subclavian vein; but a distinct hardness could be felt along the inner border of the biceps, which rendered it probable that there was phlebitis of the venæ comites of the brachial artery; and after death, the left vena innominata and subclavian, and the brachial veins, so far down the arm as they were examined, were found completely plugged up, and rendered solid by coagula; their lining membrane being at the same time of a bright red colour.*

The aneurismal tumor was found to be of the spurious sacciform kind, and arose from the arch of the aorta, which was itself much dilated: the sac was almost completely filled with coagula, mostly arranged in layers; the outermost of which were dense, and nearly colourless,—the inner ones somewhat less firm, and not so white: between some of the latter there were a few interspaces filled with recently-coagulated blood. There were proofs, then, of contraction of the sac having taken place, and it contained but a small cavity into which the circulating blood could enter, so that it was evidently in progress of cure, and in a kind of transition stage towards that condition described by Hodgson in which aneurismal sacs have been so completely filled up with coagula, and their volume afterwards so much diminished, that they have appeared only as solid tumors adherent to the aorta.

* It is worth remarking, that, though there was here distinct evidence of phlebitis, and that the veins were as completely plugged up as in any case of phlegmasia dolens, yet the swelling of the limb was of a very different character from that which occurs in this disease. In phlegmasia dolens, the swelling is hard and resisting on pressure: in the case under consideration, it pitted very readily, and there was an entire absence of pain. Although phlebitis occurs in phlegmasia dolens, I cannot agree with those who consider the latter to depend entirely upon the former: phlebitis does not constitute the whole of the disease, but there is associated with it inflammation of the cellular sub-cutaneous tissue, accompanied with the deposit in it of coagulable lymph.

As the aorta itself was so much diseased, and as several bulgings in different parts of it had already taken place, it is not improbable but that another large aneurismal sac might have been formed upon it, or that it might ultimately have caused death by rupture; but, on the other hand, it is highly probable that, so far as regards the aneurismal tumor of which we have been above speaking, the danger had very considerably diminished, and that, had it not been for the disease of his lungs, his life might have been prolonged for a considerable period.

The rapidity of the pulse, his great emaciation, the occasional night-sweats, the cough, and the expectoration (streaked with blood for two or three weeks before death), were some of the general symptoms referrible to the tubercular disease of the lungs, which was also manifested during life by the dulness on percussion, deficient expansion of the chest on inspiration, bronchial respiration, with prolongation of the expiration and mucous rhonchi, all of which gradually increased. Percussion was duller over the lower than over the upper part of the left lung posteriorly, while the reverse was the case over corresponding parts of the right side of the chest: these signs were in accordance with the state of the lungs found after death; for, though the tubercles were more numerous in the upper than in the lower part of the right lung, they were both more abundant, and also much further advanced, in the lower lobe of the left lung than in its upper portion—a circumstance which forms quite an exception to the general rule of their being more numerous and first developed in the upper lobes of the lungs. Rokitsansky has remarked, that, "out of 108 cases of aneurism, tubercles co-existed in 5 only; restricted to a small portion of the lung, and either engaged in the progress of retrogression, or altogether extinct:" and Hasse, in his *Pathological Anatomy*, deduces from this that there must be some antagonism between phthisis and aneurism. Such *may* be the case, but Rokitsansky's observations are not sufficient to prove it; and before it can be admitted as a fact, it must be shown that tubercles in the lungs are rarer in persons affected with aneurism than in other persons (not having that dis-

ease) who have arrived at the age at which aneurism is usually met with; for it is well known that the great mortality from phthisis takes place before the middle period of life, while aneurism is principally a disease of this period, or of a still more advanced age. In the first of these cases the two diseases coexisted, but in the second there were no tubercles in the lungs.

In a disease the progress of which is usually so slow and insidious as is that of aneurism, it is generally difficult to determine with accuracy the period of its commencement; and in this instance there is the additional embarrassment arising from the co-existence of another disease, to which, as we have seen, some of the symptoms that were exhibited might be ascribed. It is clear from the size of the aneurism, and from its having caused some absorption of the sternum, that it must have existed a considerable time; and there can be little doubt that the difficulty in lying down in bed, from which he had suffered for five months, was owing to this disease, and not to the presence of the tubercles: because the progress of the latter, as evidenced by the physical signs, was not, when he came under treatment, so great as to have given rise to so severe a symptom. It is not improbable, indeed, that the disease had existed for a much longer period than that just named, though proof of it cannot be derived from the history of the patient, who, however, paid so little attention to his symptoms that, being able to continue his laborious occupation, he considered himself "well" till within three weeks of the time when I saw him. In some instances aneurisms of the aorta appear fairly traceable—at least as far as regards their exciting cause—to severe falls, violent exertion, or similar circumstances; but, in this instance, although the patient had met with a fall of a severe character, yet the date of it was too remote to be considered as in any way connected with the disease of the aorta. The laborious nature of his business might, perhaps, have some connection with the production of aneurism, but yet a predisposing cause must have existed: he was of that age—between 40 and 50—at which aneurism is most frequently

met with; and he had been almost all his life accustomed to drink a good deal,—a circumstance which has been with probability assigned as one of the causes of that diseased condition of the lining membrane of the arteries which so frequently—almost universally—coexists with aneurism; and which was present in this case.

The same condition of the aorta was also found, and to a still greater extent, in the case of Esther M.; for the whole of the inner surface of the arch was entirely covered with atheromatous deposit, in various stages, from the earliest to that in which it assumes the character of bony laminae. Every part of the arch being thus rendered equally inelastic, the impulse of the blood would have a tendency to dilate it equally at all parts, and thus to cause a *general dilatation* of the vessel, without producing a sac such as existed in the first case. As usual in instances of simple dilatation, the aorta contained no coagula, but in several parts of it the ossific deposits projected directly through the inner investing membrane, so as to have been washed by the current of the blood. To this circumstance is owing the rasping sound which was observed during life; and a similar condition obtaining, in most cases of dilatation of the aorta, accounts for the rasping sound being so generally found in this form of aneurism: while in saciform aneurism (whether true or false) there is often no murmur audible, as the parietes of the aorta may present no rough surface against which the blood can produce a friction sound, and as other conditions capable of causing murmurs may be absent. A superficial double rasping sound heard over the upper third of the sternum, but loudest between the cartilages of the second and third ribs, at the right border of the sternum, while there was only a single and less loud (regurgitant) murmur over the aortic valves: dulness on percussion, and a very slight pulsation felt there—were the physical signs which led to the diagnosis, during life, of aneurism of the aorta within the pericardium; for, as the rasping sounds were heard in their greatest intensity so low down the right side of the sternum, the aneurism, or a portion of it at least, must necessarily have been situated at

the very commencement of the vessel; and when that occurs, the pericardium is usually carried upwards by the dilating aorta, so that, instead of investing the vessel close to the point where it arises from the heart, it encircles it at a point an inch or two higher up: a considerable portion of the ascending aorta being thus enclosed in the pericardium. Such a condition was found in the post-mortem examination in the present instance.

The two cases I have detailed varied much in the amount of suffering to which they gave rise. In the first one, there was very little; in the second, the frequent attacks of angina pectoris were productive of great distress, especially towards the latter period of the patient's life. The heart was hypertrophied and dilated, and there was also found ossification of the coronary arteries, and, as already stated, disease of the aorta. The two latter conditions, according to the researches of Dr. Forbes, are met with so frequently in cases of angina pectoris, that they must be looked upon as something more than mere coincidences, although it is quite true that angina has sometimes occurred where, after death, no lesions of the heart or of the aorta have been discoverable. I have had three well-marked cases of the disease under my care: in the first of these, which was the least severe, there were physical signs of slight valvular disease; the second is the case of Esther M., now under consideration; and the third was that of a man aged 57, who had presented symptoms and physical signs of disease remarkably similar to those exhibited in E. M.'s case: the attacks of angina commenced with sensations exactly resembling her's; and so severe were they, that he had placed a strong rope across his room, at a height of about six feet from the ground, so that when the paroxysms came on, he could lay hold of it, and by thus making the arms fixed points, assist the efforts of respiration. The physical signs were those of hypertrophy and dilatation of the heart, with slight mitral, but more considerable aortic valvular disease: there was also dulness on percussion across the sternum, and beyond its right border, to a point between the cartilages of the second and third ribs, where a slight pulsa-

tion was perceptible, and where there was likewise a very loud and harsh double rasping sound, heard also, but less intensely, across the upper part of the sternum. To the right of this bone, the first and second of these rasping sounds were equally loud, and of nearly equal duration: in both carotids, and in each arm, as low down as the middle of the brachial artery, there was a distinct rasping sound synchronous with the pulse, but in these parts no second rasping sound could be distinguished. From these signs, there could be no doubt of the man having considerable dilatation of the aorta. Hence, in all the three cases, there was disease either of the aorta or of the heart. Of the aorta and heart in two, and of the heart only in the third; in one, ossification of the coronary arteries was found after death; in the other two, its existence or absence is yet uncertain, as the physical signs during life are not sufficient to determine the point. These cases, then, so far as they go, tend to confirm the opinion of there being a connection between angina pectoris and organic disease of the heart and aorta.

Whatever opinion may be held by some as to the utility of the plan recommended by Valsalva—and I confess that I, for one, should very much hesitate to employ it in any case to the extent he recommended,—it is quite evident that its adoption would have been very injudicious in either of the cases under consideration, owing to the former one being complicated with phthisis, and to the latter being that form of aneurism in which coagula are scarcely ever known to be formed. Depletion, therefore, was employed to but a very slight extent in either case: in the first, only when, on one occasion, there appeared danger of asphyxia, and when the abstraction of a very small quantity of blood gave almost immediate relief; and in the other, when, in one instance, the state of the pulse and her general symptoms seemed to demand it. In the first case, too, there was very satisfactory proof that Valsalva's plan was not needed, for the aneurism very considerably diminished without its adoption, and continued to do so while the patient was taking the *Mistura Ferri Composita*, which was given with the view of supporting the

strength, and to relieve some of the phthisical symptoms, but which, according to Valsalva's plan, would have been contra-indicated. In the second case, the object was, in the first place, to relieve the bronchitis, and this was effected by a combination of squills, ipecacuanha, and digitalis, together with a blister to the chest. The dropsy which supervened was partially removed by diuretics, and afterwards still more efficiently by the bitartrate of potash, in such doses as to act very freely on the bowels. The cause of the dropsy, however, being persistent, it again returned prior to her death. Stimulants were by far the most useful remedies for shortening the duration of the attacks of angina pectoris, as well as for preventing their occurrence, if taken so soon as the slightest symptoms gave warning of their coming on. Owing to the considerable period during which the patient was under my care, I had an opportunity of trying stimulants of various kinds, and in various combinations; but in this case, as also in the other one with dilatation of the aorta and angina pectoris, which I briefly mentioned in the course of these remarks, sesquicarbonate of ammonia and sulphuric ether were the two which I found most effectual.

PREVALENCE OF FEVER IN EDINBURGH.

DR. TAYLOR, on the part of the medical committee, reported to the Parochial Board that the number of new cases of fever during the week ending 30th October was 120, which was 6 above the previous week; and that the number of cases visited in their own houses was 64, which was 10 less. There were 118 in the two fever wards, and 68 in the convalescent-house; so that the fever wards and the convalescent-house were quite full, as was also the Infirmary. In the month of October there were 440 cases. The total number of cases for the quarter ending 30th September was 898; so that it would be seen that the number which had occurred in the month of October alone, was equal to the half of these. If they included the month of October, which would be a period of four months, the number of fever cases would be 1338 visited by the medical men in connection with the Board. One of their medical men, Dr. Anderson, was at present laid up, and a supernumerary would be required to officiate in his stead.

A CASE OF SPASMODIC CHOLERA.

By W. R. WILDE, Esq. F.R.C.S.

Dublin.

I SHOULD have published the following case of spasmodic cholera before, but for an unwillingness to excite public alarm upon a subject of such moment. It is interesting from its apparent cause—unwholesome food,—from the circumstances of its assuming a purely spasmodic or oriental type,—and from blueness and collapse being among its principal features.

James Logan, aged 30, coachman, of slight make and sandy complexion, had previously enjoyed good health, and for eighteen months before had abstained from intoxicating liquors of every description. Upon Sunday, the 4th of September last, he drove a carriage out to Howth, a distance of about seven miles, and appeared perfectly well. He arrived at Howth about three o'clock, and was not seen by his master until inquired for about seven o'clock, when he was found lying upon some hay in the following condition:—The legs were bent upon the thighs, and the knees drawn up towards the abdomen; the head bent rather backwards; the arms stretched from the body, but the forearms flexed, and the hands firmly clenched. In this position he was found lying upon his side, but he was never able to retain the same posture for more than a few minutes at a time, as violent cramps and spasmodic twitches, resembling convulsions, which seized upon his extremities, caused him to roll about in paroxysms of the most intense pain, which he referred chiefly to the calves of his legs, hands, and abdomen, while he uttered groans expressive of severe pain. During one of these seizures, we found his face expressing great suffering, and so much altered by extreme collapse as scarcely to be recognisable; the eyes were sunken, and had a glassy appearance; the lips bloodless, and retracted from the teeth; the whole countenance, as well as all the exposed parts of the body, had become of a remarkably blueish leaden hue, and were of a death-like coldness. The limbs, as well as the muscles of the abdomen, were very rigid, and

the palmar side of the finger-tops had assumed the peculiar shrunken appearance which those parts take on when long immersed in water. Violent spasmodic twitchings occasionally seized him, during which he very much resembled a patient affected with tetanus. The voice was hollow, and sunken almost to a whisper; the tongue was remarkably cold to the touch; the pulse scarcely perceptible at the wrist. He vomited occasionally some fluid like meal and water, and he stated that he had been purged severely a few hours previously. His chief complaint, however, was of the cramps, and soreness of his limbs and belly. The only remedies at hand were, brandy, essence of ginger, and laudanum; the two former of which were administered in considerable quantity, together with a full dose of the latter: and warmth was applied to the abdomen and extremities with as little delay as possible. Under these means he appeared to revive somewhat.

In consultation with Dr. Stokes, who happened to be present, it was deemed the most advisable course to remove him without delay into Dublin. He was accordingly rolled in warm coverings, placed in a carriage, and driven to the hospital with as little delay as possible, brandy and ginger being administered to him two or three times on the road. Upon arriving at his destination, he appeared stronger and better in every respect, but upon being removed from the carriage, he was again seized with a violent paroxysm of pain, accompanied by spasm, arising perhaps from exposure to the cold air.

It is unnecessary to enter into the details of this case at greater length. The liberal use of stimulants, the application of heat, friction of the limbs, and rubefacients applied to the abdomen, together with the internal use of acetate of lead and opium, the administration of starch and opium-injections, and the assiduous attention of the nurses and students, finally brought this patient about.

Upon inquiring into the history of the case, the man stated, that upon Saturday, the 3d, he had made a hearty supper of conger eel, and that before morning he was attacked with purging, which had not quite subsided when he drove out upon Sunday; but that he had eaten his dinner at Howth about

5 o'clock, immediately after which he was attacked with vomiting, and a repetition of the purgings; and that about an hour afterwards he was seized with cramps, prostration, and the other symptoms under which I found him labouring, and which had so nearly proved fatal.

On Monday, the 5th, he was ordered some aperient medicine, and on the same evening he found a fish-bone in one of his stools. On the 6th, he felt no pain or inconvenience in the rectum, but remained in hospital, as he was very weak. On Tuesday night, the 7th, he felt great soreness and pain in the rectum: he could not sit or walk, from tenderness of the part. One of the pupils who was in attendance found him lying on his back, forcing as if there was a foreign body in the rectum.

The finger having been introduced into the passage, a large sharp spiculated substance could be felt about three inches from the orifice, lying in the pouch of the intestine towards the sacrum. It was seemingly entangled in a fold of mucous membrane, and every effort to detach it by the finger produced great pain, and caused a stream of blood to flow from the anus. The man having been placed in the lithotomy position, with the buttocks projecting over the side of the bed, and the forefinger of the left hand being introduced high up into the rectum, a small blunt hook was passed up along it, and by a little manoeuvring the spiculated body was disentangled from the intestine, and brought away by being pressed against the finger with the instrument. The foreign body was found to be one of the vertebræ of a large conger eel, with its two spines remaining attached. It measured upwards of an inch in its longest diameter. Leeches were applied round the anus, and an opiate administered. Some blood flowed from the rectum for a few hours. The man recovered.

MEETINGS OF MEDICAL SOCIETIES APPOINTED FOR THE ENSUING WEEK.

Westminster	Sat. Nov. 20, 8 P.M.
Medical	Mon. " 22, 8 "
Medical & Chirurgical	Tues. " 23, 8 1/2 "
South London	Thur. " 25, 8 "

ON
SCROFULA:

A Paper read before the Brighton and Sussex Medico-Chirurgical Society, Oct. 7th,

By W. KING, M.D. Cantab., President.

[Continued from p. 807*.]

PROP. VI.—Scrofula and phthisis coexist in the same family.

More than half the scrofulous patients have parents or ancestors who died of phthisis. Of 84 cases in the hospital of St. Louis, at Paris, more than half had consumptive parents.

1. An infant had phagedænic ulcer of the cheek. The mother, brother, and sister died of phthisis.

2. A man had tubercular cervical glands. His sister had chronic cough following croup in infancy. His mother and brother died of phthisis.

3. A man had chronic ophthalmia, and caries. His brother died of acute hydrocephalus; his sister of phthisis; his father of phthisis at the age of 37.

A family is called consumptive when most of them die of phthisis, and scrofulous when most of them die of other forms of scrofula; but the constitution is the same.

All the patients in the hospital of St. Louis who died of the various forms of scrofula, had tubercles in the lungs. They sometimes die of other forms of scrofula, but the most common cause is phthisis, or tubercles in the lungs. They often recover from the other forms of scrofula, and then die of phthisis: and for this reason the most experienced medical men are very cautious in their mode of curing local scrofulous affections, for fear of metastasis to the lungs. They always endeavour to do it upon an alternative, —i. e. a constitutional principle; so that the cure may be the effect of an improved constitution, and the improved constitution the effect of the treatment.

PROP. VII.—Persons who are scrofulous in youth sometimes become strong after puberty; but the taint remains, and the children are scrofulous. The parents try to conceal the scrofula of their youth, which makes it difficult for the physician to trace the constitution of the child.

* ERRATUM.—In our last number but one, p. 803, col. 1, line 7, for "Dr. King, Cantab. President," read "William King, M.D. Cantab." &c.

1. A boy aged 13 had a scrofulous shoulder-joint. His father appeared healthy, but his youth had been sickly, and at one time he was threatened with phthisis; and his mother died of phthisis.

2. A man was one of nineteen children, of whom thirteen died early. He had a sickly youth, but at 20 was thought strong, and married. He had four children; two died infants, and two were scrofulous.

PROP. VIII.—Parents who do not appear to be scrofulous themselves, but whose brothers or sisters are so, have scrofulous children. The family taint seems to pass through them to the children.

1. Two brothers were tuberculous, and had white swelling. The parents appeared to be healthy, but the mother's sister died of phthisis, and had a scrofulous child.

2. A girl aged 4½ had scrofulous abscess in the scapula. The mother appeared healthy, but her sister was rickety, and had two rickety children.

3. A girl aged 11 had scrofula in infancy. The parents appeared healthy, but the father's brother died of caries of the sacrum and abscess.

4. A man had six scrofulous children. He appeared healthy, but he had two sisters scrofulous.

5. Two parents apparently healthy had a scrofulous child. The mother had lost several brothers and sisters by phthisis.

It is the observation of cases of this kind which has given rise to the popular opinion that consumption, like gout, often skips a generation, and reappears in the third. The taint remains. It would be interesting to find out the cause of the remission. Perhaps the intervention of a less tainted parent may modify the poison, which afterwards gathers strength again, upon the principle that it is one which continually tends to self-destruction.

We shall now endeavour to point out certain causes which seem to originate scrofula, or the scrofulous constitution, or poison, independent of hereditary taint.

CAUSE I.—The first cause is syphilis; which, in many cases, is obvious: and in others, when the parents conceal it, it can only be inferred. If a parent has had both syphilis and scrofula, the poison is

doubled. The following cases suppose that the parents were more or less free from scrofula, or that syphilis was the more obvious disease.

1. A man had tubercles and caries, whose father had had syphilis several times.

2. A child aged 10 was tubercular. The mother had syphilis, nodes, and ulcers.

3. In a family of three children, the two elder were healthy, the youngest scrofulous. The two eldest were born when the father was healthy; the third after he had contracted syphilis and infected his wife, and it died of marasmus.

Astruc, who used to be a great authority upon this subject, says, that when scrofula is not derived from scrofulous parents, it is invariably derived from syphilis. This opinion is too unqualified, and has led to giving too much mercury in scrofula; for mercury in excess is a most virulent poison, and will undermine the strongest constitution.

4. An epidemic attacked the nurse-children of Montmorenci in France, which Portal, an eminent man, said was scrofula. Moraud and Lasseigne were sent by Government to investigate it. They pronounced it to be syphilitic from the nurses, who almost all had syphilis. They were cured by mercury, and as they got well, the children got well.

The eruptions, ophthalmia, ulcerations, and caries, of the two diseases, are often very similar; but, as syphilis is cured by mercury, and scrofula not, the result of treatment is a sure test of the nature of the disease.

Syphilis is accidental, contagious, and curable. Scrofula is constitutional, not contagious, and incurable, or, at least, difficult of cure. Scrofula always existed. Syphilis did not exist in Europe till about A.D. 1500.

The disease derived from syphilitic parents is not primary but secondary syphilis, syphilitic cachexia, or scrofula. Spain has been overrun by this disease subsequent to the introduction of syphilis.

The antiphlogistic treatment of syphilis, instead of the mercurial, is a cause of scrofula, because the cure has not been radical.

CAUSE II.—The second originating cause of scrofula is the excessive abuse

and indulgence of the sexual instinct. One instance will illustrate the principle:—

All the children of a family had scrofulous affections: hæmoptysis, ophthalmia, pulmonary tubercles, worms. One little girl had abscess in the left sub-maxillary region, was of pallid complexion, with large mouth and decayed teeth. The chief cause appeared to be the early habitual sexual dissipation of the father. Cases like this, as well as those which are of syphilitic origin, illustrate the remarkable and forcible expression of Job, (c. 20, v. 11) "His bones are full of the sin of his youth."

This is one of the many ways in which wealth may prove a curse. Wealth is power, and the first tendency of power is to abuse itself, in all the modifications of which that power is susceptible.

CAUSE III.—A third originating cause of scrofula is *premature* indulgence of the sexual instinct, and *premature* marriage. If the offspring are to be healthy, strong, and vigorous, no man ought to marry before the age of 25.

The secretion of the seminal fluid, like all other parts, is and must be subject to laws which decide its health and vigour. The secretion should not be too rapid or frequent, and it should also be spontaneous, i. e. the natural effect of a healthy organism, and not of a mere mental action, or effort or imagination.

There is a period of life during which these conditions are complied with, before and after which they are not, and even during this period their fulfilment may be prevented by disease.

It is remarkable, that among the German nations which overran the Roman empire, Tacitus relates that it was held disgraceful to indulge the sexual instinct before the age of 20. And by the laws of Moses, a married man was forbidden to indulge the instinct on the day or night previous to a battle. They were aware that a certain loss of physical strength was the consequence.

The brute creation do not copulate till the instinct is physically perfect, and even then the first progeny is not so perfect as afterwards; but man, being endowed with higher faculties,

is liable to greater abuse, and, at the same time, suffers severer penalties for transgression. The law obtains among vegetables as well as animals, that the produce of young plants is not so perfect as that of elder ones.

It is a universal law of organization and life, that the more refined and exquisite the organization is, and the higher the faculties are, the greater are our responsibilities, the greater our happiness, or the greater our miseries. Organization and life balance each other. To use a mathematical phrase, they vary in a direct ratio. As the one increases, the other increases; as the one decreases, the other decreases. It would be an absurdity if the organization of the wise man were inferior to that of the tadpole, or if the power to study organization were to discover that its own organization were inferior to another which did not possess the power of self-study. Here would be both an effect without a cause in the one case, and a cause without an effect in the other.

Wisdom and power can only be known by the use of means adapted to ends. Without great and good ends, brought about by suitable means, wisdom and power are only presumptive and gratuitous: they cannot be proved to exist. The world is full of great ends, *i. e.* great facts, and it is the business of science to investigate the means by which nature attains those ends. Medical science has the privilege of proposing to itself the great end of humanity, and is ever searching for the means by which nature has ordained that this end should be brought about; and we have the honour of living in an age when a subtile and microscopic organization, unknown to former ages, has been demonstrated, so delicate and so beautiful, that we almost mistake it for life and mind itself. We at least stand upon its threshold; and unworthy should we be of our great predecessors (for medicine has always boasted of great and noble minds devoted to its mysteries) if we did not join these pure worshippers of the vestal flame in adoring, as they did, with fewer advantages, both the work and the workman, the organization, the mind which inhabits it, and the great *causa causarum* which devised it.

But to return. If premature marriages have been preceded by indul-

gence, they are still more unfavourable to the offspring; and if by syphilis, still more so. The gradual extinction of the higher and aristocratic classes by the want of direct heirs, is perhaps partly owing to these causes engendering a scrofulous, and therefore a perishable constitution.

The lower classes marry early, not only from instinct, but also to obtain the services of a wife and companion. The physical strength has been deteriorated by low diet and hard labour, and a premature marriage completes the inability to produce a healthy, strong, and robust offspring. It is calculated that the labour of the peasantry is two-thirds too much, and the food two-thirds too little. Their food, clothing, and habitations, are calculated to the minimum of a sufficiency.

CAUSE IV.—A fourth originating cause of scrofula is marriage too late in life.

The debility produced by early sensuality may be in some measure remedied by moderation, restraint, and time, by change of mind, thought, imagination, desire, and intellectual occupation, the *perdona* of the New Testament. But the debility produced by old age can never be remedied.

The generative faculty is said to begin to decline about the age of 45, which may be called its culminating point. It then begins to decay slowly at first, and more rapidly afterwards. Those who marry late in life may have one or two children strong, but every child is weaker than the preceding ones, and the youngest are the weakest. The old man's child is become a proverb for visible debility stamped upon its physiognomy. Many of them die at birth. Some are precocious in childhood, and then suddenly fade, and become effete and stunted, like the withering and dropping off of fresh fruit in autumn;—they are born out of season.

The period of weak fecundity in woman commences about 40. After this time pregnancy is often a delusion, or there is imperfect conception and miscarriage, or the child perishes at birth, or, if reared, it is delicate and scrofulous.

1. A healthy woman, aged 46, had a daughter. Her infancy was sickly, and at 19 she had tubercular cervical glands.

2. A healthy woman, aged 43, had a daughter. When 5 years old she had double ophthalmia, and, when 16, had tubercular cervical glands.

When marriage has not been followed by children till after several years, they are generally weak and scrofulous, agreeing with the age of the parents at the time of birth. Unfruitful marriages are perhaps a sign of scrofula.

Children born after the expectation of further increase of family has ceased, are generally scrofulous.

1. A woman had six healthy children. She then ceased child-bearing for some years. When aged 42, she had another son, who was scrofulous.

2. A man and his wife had four healthy children while they were in the prime of life. The mother then ceased bearing till she was 42, when she had a son, who became scrofulous.

CAUSE V.—A fifth cause of originating scrofula is disproportionate age and unequal vigour. When the father is younger than the mother, it may be a cause of scrofula.

1. A man married a woman ten years older than himself. The parents were healthy, but they had a scrofulous son.

In all animals power is the privilege of the male. The relative superiority of the man ought to be the foundation of marriage: upon it depends all domestic felicity, and often its morality. It is difficult to prove the effects of inferior power in the husband, because it is generally accompanied by some of the before-mentioned causes of scrofula.

The constitution of the children follows that of the father more than that of the mother. This is the law in the brute creation. The breeders of cattle set more value upon the male than the female.

CAUSE VI.—A sixth cause of originating scrofula is paralysis, epilepsy, lunacy, and other diseases of the brain.

1. A man had five healthy children. He then had paralysis. He then had a scrofulous child: and then six others, who died in their first year.

2. Many scrofulous patients in the hospital of St. Louis are the children of epileptic parents.

3. Many are the children of lunatic parents.

4. A lady who was insane for two

years had a son and daughter both scrofulous.

5. A scrofulous boy, aged 9, was the son of a father who died insane.

[To be continued.]

INCONSISTENCIES IN THE ENGLISH LAW OF LUNACY.—A LUNATIC ALLOWED THE CONTROL OF HIS PROPERTY.

PROCEEDINGS in lunacy appear now and then to partake of the source whence they originate. An inquiry *de lunatico* is rarely productive of perfectly sane results from first to last; the original taint is strangely apt to stick to the subsequent stages. The Lord Chancellor has made an order giving Mr. Dyce Sombre the full and uncontrolled use of his large fortune, but not superseding the commission of lunacy. It is the last feature that will seem strange to those who are not versed in the mysteries of lunacy law. If the Lord Chancellor has granted to Mr. Dyce Sombre the uncontrolled use of his property, it must be because he believes him fit to take due care of it. Any other supposition would involve rather more of madness in the Chancellor than has been alleged against Dyce Sombre himself. Why, then, not supersede the commission? A formal declaration of a man's sanity seems a fit accompaniment to putting him in possession of his property, and in the drawing it from the keeping of the law. The only assumption that may meet the case is, that Mr. Dyce Sombre is still viewed as "on trial." His alleged insanity has been checkered with a lucid interval of so striking a character that, though still a lunatic according to law, he is deemed competent to take care of his fortune. In truth, the money-test of madness is not a bad one, seeing the number of sane persons we do, who have not reached that pitch of mental soundness which would enable them to take care of their pockets. This is usually the last thing learned, and not seldom the most difficult attainment of social wisdom. Yet we find Mr. Dyce Sombre credited with this faculty even in what may be termed his probation state. Save and except the income reserved for his wife, no gentleman has a freer use of his own fortune. Superseding the commission we dare say will follow when he has sufficiently disproved his liability to a relapse. The Lord Chancellor is simply keeping it as a blessing in reserve, to be bestowed on the contingency of permanent sanity. The case will manifestly not be complete without it; for perplexing and strange as have been the various judgments pronounced on the mental condition of this gentleman, nothing appears more perplexing than a decree for giving the rights of property to one of whom the law still takes cognizance as a lunatic.—*Atlas*.

MEDICAL GAZETTE.

FRIDAY, NOV. 19, 1847.

It is with some satisfaction we perceive a strong disposition on the part of members of the profession to commence medical reform in a right spirit. We do not now allude to the benefits real or supposed of the possession of political privileges, and the right of superseding or controlling the powers possessed by the Medical Corporations, but to that substantial improvement which must proceed from the strict observance of duties absolutely necessary to the support of professional character. If a profession can only become united and make itself respected by the public, other reasonable privileges of which its members may be deprived, would soon follow. Herein lies the great difference between law and medicine. If a dispute arise between two barristers, if one has been guilty of unprofessional conduct, and has spoken unjustly or contumeliously of another, there is an Inn of Court to appeal to—the *lex non scripta* of which will soon compel the real offender to apologise, or deprive him of his privileges. If an attorney misconduct himself towards members of his profession or his clients, it is a very simple process to have his name struck off the Rolls; and he is thenceforth deprived of the means of obtaining a living by a profession the character of which he has endeavoured to degrade. Medical practitioners are exempt from any wholesome control of this kind; and hence arise bickerings and jealousies, with insidious attempts to undermine each other in public opinion. Each member is left to exercise his own judgment in meeting the supporters of

quackery in consultation, in proclaiming a superiority over his brethren by cards, circulars, or newspaper advertisements, and in using all kinds of artifices to supplant a brother practitioner to whose patient he may have been accidentally called. There is no check upon disgraceful practices of this kind except that which is derived from an innate conscientious feeling: and unfortunately this is too often stifled by the desire to advance in the world, and to obtain practice without being scrupulous as to the means. "*Quocunque modo rem*" is the motto which alone prevails with many who are permitted by law to call themselves medical practitioners, and between whom and professed quacks there is merely that parchment partition which is derived from the lawful possession of a diploma. There are acts which are daily done with impunity by a certain class of licensed medical practitioners, in their dealings with their brethren, which would infallibly lead to their degradation and expulsion from the ranks of an outraged profession, were they practising at the bar. A neglect of professional etiquette, and a defiance of public opinion, may, it is true, be occasionally followed with success; but it is obvious that this kind of predatory practice can only be carried on by a complete sacrifice of character, and to the great injury of other practitioners. On the other hand, slight reflection will shew that while regulations framed in an equitable and reasonable spirit are indispensably necessary for the maintenance of the respectability of the profession, they must be productive of equal benefit to all the members. Such regulations are directed exclusively against the practice of men who are disposed to make an unfair use of the privileges conferred upon them by law; and we may anticipate, therefore, that they

will receive the support of all honest and conscientious practitioners.

Some months since, we announced the intended formation of a Medico-Ethical Association at Manchester, and our last week's number* contained a full report of the resolutions passed at a large meeting of professional men, as well as of the bye-laws proposed for the government of the Association. In order to make known the objects of the Association, we here reprint the first resolution:—

"That the principal objects of the association be to frame a code of etiquette for the guidance of its members, to decide upon all questions of usage or courtesy in conducting medical practice; to support the respectability and maintain the interests of the profession; to promote fair and honourable practice; to correspond with bodies or individuals in other parts of the kingdom on any matter touching professional interests; and, by its moral influence, and the exercise of a judicious supervision, to prevent abuses in the profession."

The bye-laws apply to three special objects—1. The Disqualifications for Membership; 2. The Code of Etiquette; and 3. The Adjudication of Disputes.

The grounds of disqualification for membership appear to us to be unobjectionable. The enumeration of the first four laws is a sufficient proof of the present degraded state of the profession. By denying them admission as members, it admits the existence of a class of licensed practitioners who thrive by open quackery or by empirical modes of practice. The sixth law excludes another class, very numerous in the metropolis and in all large towns, who procure a living by a per-centage alliance with druggists. The seventh law does not appear to us to be very clear:—

"No member being a graduate in medicine, engaged in general practice,

shall hold the office of physician to any public institution."

We should have some strict definition of what is here intended by "general practice:" for in their common acceptation, the words might in certain localities be made to apply to the inconvenient exclusion of meritorious practitioners. Such a rule as this would disqualify some of the most eminent members of the Parisian faculty. We may be told that the rules are only framed for national use, but our view of the goodness of medico-ethical laws is, that they should have a universal application to the profession; and if they have not this, we doubt whether they can be fairly regarded as essential.

The bye-laws which constitute the code of etiquette, are framed in an excellent spirit of fairness and moderation. They are calculated to put down that undue assumption of superiority, both in young and old practitioners, which has been the source of much bitterness of feeling and of many professional quarrels. The relative values of diplomas from universities and colleges are here merged in the membership of the Association; and questions of precedence are settled upon an equitable basis. The whole of these regulations are well worthy of the attention of all professional men. If these be duly observed, the rules under section 3d need never come into operation; and those acrimonious controversies which occasionally occupy the columns of medical periodicals, would be entirely avoided. This is a very desirable consummation, and if effected only in one small provincial district, we anticipate that the benefit of a good example may in time be felt over the whole of the United Kingdom.

The power of such an Association is essentially of a moral kind: its members should be numerous, and true to each other, as well as to the princi-

* Page 861.

ples by which they are united. When exclusion from membership is felt to be a public disgrace, and the offender is completely debarred from all consultations with his brother-practitioners, he will then be compelled either to leave the neighbourhood, or be publicly pointed out as one fallen in character. That in such a case there is no private or personal feeling of envy at work, will be at once apparent from the fact, that his fellow-practitioners are as one man against him. With such a sentence it would be out of his power to maintain a respectable position in society; and should he remain to set public opinion at defiance, he must be content to associate with men who live by trickery and imposition.

We hope to see associations like that of the Manchester Medico-Ethical, formed in other parts of the country. It is in provincial towns, where every practitioner is known, that the experiment can be fairly tried. The publication of the names of transgressors, with the circumstances which have led to their exclusion, will be attended with the good effect of checking malpractices in other quarters.

We are glad to perceive that the subject has been taken up on the other side of the Atlantic, and that the late Medical Convention of Philadelphia has adopted a code of ethics very similar to that of the Manchester Association. This will require a few remarks on another occasion.

THE defection of Sir H. Marsh from the cause of Irish medical practitioners, is now fully explained by his having been appointed one of the members of the Irish Board of Health, in the room of Sir Robert Kane, who has resigned. We agree in the reasonableness of a suggestion which has been made re-

specting these Boards of Health,—that in order to prevent them from assuming a party or political character, the presidents of the Colleges of Physicians and Surgeons, for the time being, should be *ex officio* members. In adopting this plan there would be some guarantee that the privileges of two important branches of the profession, would not be entirely overlooked.

Reviews.

On Ringworm: its Causes, Pathology, and Treatment. By ERASMUS WILSON, F.R.S. &c. &c. Post 8vo. pp. 102, London: Churchill. 1847.

MR. WILSON has done considerable service to physiology and pathology by the careful manner in which he has investigated the minute structure of the skin and its appendages, and by the light which he has thrown upon the microscopical features of several of the principal diseases to which the cutaneous system is liable. The present little volume is chiefly devoted to a consideration of the nature and treatment of the "crusted or honeycomb ringworm"—the "*porrigolupinosa*" of Willan: a disease of by no means very frequent occurrence in this country, and of the more prevailing malady, "common or scurvy ringworm," in two different stages of which the author distinguishes the "*porrigo furfurans*" and the "*porrigo scutulata*" of Willan. It is not surprising, when we consider the comparatively loose style of pathological investigation which was in vogue when the treatise of Willan and Bateman was given to the profession, that some errors and inaccuracies should have crept into their description and arrangement of cutaneous diseases: it appears to have been the principal object of the author to correct, in this little treatise, some of the mistakes which he considers to have been propagated by those authors with regard to the above-named diseases, and also to establish a more correct knowledge of their intimate nature. According to Mr. Wilson's observation, the precise seat of the morbid forma-

tions of favus (*porrigo lupinosa*) is the surface of the derma. The morbid substance lies in contact with the basement membrane of the derma on the one hand, and with the epiderma on the other. From the derma, the favous substance is easily separable; but with the epiderma, it is closely identified. Its relation to the epidermal lining of the follicle of the hair is similar to that of its connection with the epiderma.

"*Structure of the favous crust.*—When we proceed to the anatomical analysis of a crust of favus, we find it to present some diversity of texture in different parts of its thickness. The upper surface, for example, being combined with the epiderma, evinces the laminated disposition of that membrane, and is brittle from its dryness. The deep surface is of a darker yellow than the rest, of a honey-yellow colour, as I have elsewhere remarked, and conspicuous for its density and toughness; tearing with difficulty when dis severed by needles for microscopical examination. The middle portion, which constitutes the greater bulk of the crust, is cream-coloured,—becoming, however, as yellow as the deep surface when moistened and broken up into small irregular masses, like mud which has been exposed to the sun to dry. Under the microscope, these three divisions of the crust, namely, its deep, middle, and superficial portions, present differences of structure, which I shall now proceed to describe. The *deep* portion is composed of globular corpuscles, measuring $\frac{1}{100}$ to $\frac{1}{50}$ of an inch in diameter, closely connected together, and forming the outward boundary of the crust. Each corpuscle is constructed of a cell-membrane, inclosing numerous very minute secondary cells ($\frac{1}{1000}$ to $\frac{1}{500}$ of an inch); and the latter are formed of several minute transparent granules $\frac{1}{1000}$ to $\frac{1}{500}$ of an inch.) In the centre of each of the secondary cells is a dark point, which might be regarded as a nucleus, but which in reality is merely the shade caused by the approximation of the elementary granules of which it is made up. The *middle portion* of the crust is composed of corpuscles much larger than the preceding—namely, between the $\frac{1}{100}$ and $\frac{1}{50}$ of an inch in diameter, and consisting of a cell-membrane, containing from four to seven or eight nucleated granules; of nucleated granules ($\frac{1}{100}$ of an inch), separate and in groups; and of other nucleated granules connected together in a linear series, and assuming a branched and plant-like form. The *superficial portion* is remarkable only for the large size of the nucleated granules, and for the more highly-developed constitution of the plant-like

growth. In it there are no corpuscular cells."—(pp. 11-13.)

We regret that we have not space to enter into the author's ingenious arguments in confirmation of his belief that favus is a modification of the elements of the epiderma; it displays, like many other parts of the author's writings, considerable tact in handling the doctrines of cell-development—a very interesting refinement of modern physiology, but one that admits of considerable exercise of the powers of the imagination.

With regard to the common ringworm (*Trichonosis furfuracea*) of the author, it is considered by that gentleman to be a modification of the normal structure of the hair and epidermal lining of the hair-follicles. He shows that the hair-fibres which enter into the construction of the great bulk of the hair are composed of cells, and that these latter are made up of granules; and he agrees that, if from any cause the granules of the hair-cells should undergo enlargement or hypertrophy, the state of the hairs will be precisely that of common ringworm, and if the destruction of the natural tissue of the hair be considered it may be described as a *granular degeneration* of the hair.

"The mode in which these nucleated granules are formed appears to be identical with that of the production of the analogous granules of favus. On the dermal surface of the epidermal lining of the diseased follicles, I discovered corpuscles perfectly resembling favus-corpuscles, and I make no doubt that these corpuscles undergo the same changes of growth and development as I have previously described in connexion with the formation of favous matter. There is, however, this difference between the two affections—namely, that, in common ringworm, the cell-development ceases with the production of nucleated granules; whereas, in favus, it is driven on another stage; namely, to the formation of celled and plant-like stems. It is surprising, under these circumstances, that favus is so rare in comparison with ringworm, and that the latter does not occasionally assume the characters of the former."—(p. 62.)

Although fairly admitting that he has not had opportunity of following up the researches of Gruby very attentively, Mr. Wilson combats the opinion maintained by that author that the granules of common ringworm, as well

as the abnormal cell-tissues of favus, are to be regarded as vegetable formations. With respect to favus, the author very justly remarks that mere resemblance to a vegetable formation is not sufficient to constitute a plant. "The statement of the origin of the vegetable formations by roots implanted in the cortex of the crust is unfounded; the secondary cells bear no analogy to sporules or seeds, and it is somewhat unreasonable to assign to an organism so simple as a cell the production of seed, and reproduction thereby, when each cell is endowed with a separate life, and separate power of reproduction. Again, it has heretofore been assumed that the favous matter was contained in the hair-follicles, and, consequently, communicated with the exterior—an assumption which rendered the idea of a plant-like formation the more probable. But if, as I have shown, the favous matter is sub-epidermal, and has no communication with the exterior, it will be necessary to admit the production of a vegetable organisation within the animal tissues before such a phenomenon can be received as possible. The mucedinous formations which have been described hitherto as having been discovered in the animal body, have always been found on the surface of membranes, and not in the substance of tissues, as is the case with favus."

The author is as little inclined to yield this point in common ringworm as in favus; on the contrary, he argues that in the former disease the absence of the ciliated shafts is an additional ground of argument against the vegetable theory. It is, he thinks, perfectly consistent with the pathology of abnormal nutrition, that the hair-granules should become enlarged, and thus be the cause of the subsequent changes taking place in the hair. But the hypothesis of vegetable growth within the substance of the hair he finds it difficult to comprehend.

The author lays down the same general principles for the treatment of each of these two forms of disease; the first indication being to restore the defective powers of the constitution, the second to restore the local power of the skin. The fulfilment of the first indication calls for improved hygienic conditions, improved diet, and tonic alterative medicines; that of the second

requires the aid of local remedies belonging to the class of abluents and stimulants. The author's remarks upon the most proper mode of carrying out these indications in practice are, like all other parts of the memoir, worthy of perusal.

We shall not attempt to inquire why Mr. Wilson has thought it necessary to publish this very brief though interesting essay in the form of a separate volume, as that is a matter which concerns himself and his publisher rather than his readers and the reviewers; but we conclude that these observations will be incorporated in the next edition of his *Treatise on Diseases of the Skin*, which may be easily made to contain all that is useful in this slender brochure without sustaining any very extraordinary increase in its bulk.

—
*Dr. Snow's Work on Ether Vapour—
Reply of the Reviewer.*

OUR last number (page 859) contains a letter from Dr. SNOW, in which that gentleman alludes to certain omissions which he has observed in our notice of his work "On the Inhalation of Ether" in the preceding number (page 813), where, in the sentence "It is not always possible to avoid having the breathing somewhat stertorous," we omitted the word "always." We regret that this accidental omission should have occurred; but we can assure Dr. SNOW that it did not by any means lead, as he appears to suppose, to our somewhat unfavourable opinion of the effects of ether as described in his work. That opinion had direct reference to the *whole* of his description of the symptoms produced during the "fourth stage" of etherization, in which he states that "*there is often snoring*" (page 7, line 4), although he modifies that expression in his letter to us by remarking that "simple snoring is quite an exception, and a state of breathing that can be called stertorous is still more rare." Dr. SNOW also alludes to an omission at the commencement of our notice. That paragraph was not placed between inverted commas: it was therefore not intended to be regarded as a verbatim transcript of Dr. SNOW's observations.—
REVIEWER, GAZ.

The Philanthropist: a Sanatory, Miscellaneous, and Popular Monthly Journal. Edited by Dr. HAYDEN. No. XIII. Dublin, November, 1847.

Dr. HAYDEN's motto is *Humani nil a me alienum puto*, and we quite agree in its being appropriate to the contents of the magazine. The wrongs and grievances of the medical profession—the rights and privileges of the sons of Esculapius—the doings of councils—fees—philippics upon Sir Philip Crampton—sanatory reform—the insecurity of life and property in Ireland—a song by a lady—and a romantic story of “the first and last love,” involving the eternal happiness of some gentleman, not of the medical profession, fill the pages of this number of the *Philanthropist*. For what class of readers it can be intended we are perfectly at a loss to divine, nor can we conceive what other object than that of bringing himself into notice by eccentricity, could have induced the author to put his name on the title-page of such a publication. One half of the number is devoted to a violent attack upon the Council of the Irish Royal College of Surgeons. It appears that Dr. Hayden has been deprived by this body of his fellowship, in consequence of his having practised pharmacy. Into the merits of the dispute we do not propose to enter; but we consider it a mark of very bad taste on the part of any lecturer, to make an introductory address to students, a vehicle for personal invective and vituperation. The number is closed with an advertisement of the doctor's address and hours of consultation, followed by a minimum scale of fees, as minute in detail as those which apply to the fares of cabs and hackney coaches in the metropolis. The *Philanthropist* must surely be a *jeu d'esprit*.

Journal of Public Health; or, Monthly Record of Sanitary Improvement. Edited by JOHN SUTHERLAND, M.D. Liverpool, No. 1, November 1847.

THIS is a praiseworthy attempt to bring before the public and profession the subject of Sanitary Improvement in a plain and intelligible form. It is strange that while hygienic facts and doctrines have long had journals assigned to them in France and Germany, no publication of the kind has

yet proved successful in England. Dr. Sutherland has already shown himself well qualified for the office of Editor to a Journal of this kind, by his papers in the “Health of Towns’ Advocate,” of which we inserted a notice in this journal some months since. In aid of his undertaking, he has contrived to enlist a large number of well-known professional men.

We have looked through the articles in this number: they are well written, and strictly confined to the objects of the publication. If the Journal receive only a fair amount of support from the Health of Towns’ Association, we augur for it the success which such an undertaking deserves.

Proceedings of Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

Tuesday, Nov. 9th.

J. M. ARNOTT, Esq. F.R.S. PRESIDENT.

THIS was the first meeting of the session; the library was crowded with members and visitors.

A paper was read by Mr. B. PHILLIPS, entitled,

Observations on the Diagnosis and the Treatment of Intestinal Obstruction dependent on Internal Mechanical Causes.

The object of the paper was to show the great difficulties which are experienced in the diagnosis of the causes and the seat of an internal obstruction—the great mortality which occurs in such cases—and to consider the question, How far are we justified in resorting to surgical operation for their relief? The author had not based his observations on his own experience alone, but had endeavoured to elucidate the subject by a careful consideration of 169 cases, in which obstruction was more or less complete. He first stated the particulars of cases exemplifying several varieties of these affections, for the purpose of showing the great similarity of the symptoms which were present, under very different circumstances. After setting forth the more ordinary symptoms, he entered upon inquiring whether there be any combination of those symptoms by which particular varieties of obstruction are characterised, so that the plan of treatment may have reference to the cause of the obstruction. The result of a careful ana-

lysis of symptoms and cases went to satisfy the author's mind that no arrangement of symptoms is so definite or constant as to make a diagnosis of the cause of obstruction conclusive. Supposing operation to be resorted to, it is of course very desirable to ascertain the seat of the affection; and here the difficulties are not less formidable than those which occur in attempts to determine the cause of the obstacle. The history of this case may give assistance in some instances, the existence of a tumor in others, and the distended intestine in a few cases; but in most instances we shall be left in doubt. The author then stated the results—unfortunate enough, certainly—of ordinary treatment; and concludes that there are cases in which recourse to surgical operation is justifiable. He showed that the abdominal walls have been cut through in more than fifty cases, for the purpose of affording relief, stating the particulars of many, and the results of all; and showing that of those operations twenty-four appear to have terminated favourably. He showed, further, that some of those operations were undertaken with a view to seek the obstacle and to remove it, but in very few instances has the object been accomplished, the ordinary result being the establishment of artificial anus; and he regarded this as the only practicable result of operation in cases which do not prove fatal.

Mr. WADSWORTH related the case of a child, five years of age, to whom he was called about four hours before death. The little patient had from birth been the subject of obstinate constipation, and three weeks previously to death had been seized with pain and tenderness in the abdomen, from which he recovered under proper remedies, and was so well the day before he died, as to be able to trundle his hoop in the Park. In the night he was suddenly seized with acute pain in the abdomen, attended by vomiting and other symptoms of strangulation. He died, and, on examination, several folds of ileum were found in a state of strangulation from being encompassed and bound tight by a broad band, about three inches in length, attached to a diverticulum of the ileum, and connected with the mesentery. In another case he had seen a woman, three days before death, who had had no relief in her bowels for six days previously. The abdomen was not painful, but tympanitic. Medicines afforded no relief; and after death, which occurred at the end of four days, a stricture of the transverse arch of the colon was discovered, about half an inch in length, and puckered in appearance. In neither of these cases did the operation of opening the cavity of the abdomen seem to him justifiable.

Mr. HILTON thanked Mr. Phillips for his

important communication; but he was of opinion that the practical inferences to be drawn from so much matter might have been rendered more obvious if, instead of generalising the more prominent and striking symptoms which have occurred irregularly and variably in so many cases, the author had grouped the cases according to the locality of the obstruction, and had indicated with more precision the symptoms apparently characteristic of any one particular seat of disease producing the obstruction. By pursuing such a course, he thought the author of the paper would have attached more value to some of the symptoms—for example, to the urine-test, if he might so term it. In the cases which he had seen of impassable obstruction in the upper part of the jejunum, the deficient secretion of urine was a most remarkable feature; and he believed, when this symptom was observed in association with a flattened or concave condition of the abdomen, the two in combination might be considered almost pathognomonic of the seat of the obstruction being near the stomach. He would merely take this example as an instance of what he thought might possibly have been ascertained if the contents of the paper had been grouped in reference to the position of the obstructing cause. He agreed with the author regarding the propriety of the median section of the abdominal parietes, when the operation was deemed necessary, and the exact seat of the obstruction not known; but, after opening the abdomen, instead of attempting to trace the distended intestine, with the view of reaching the constricting cause, he would prefer the plan which he had himself adopted, of tracing the empty intestine towards the constriction, and using it to discover the obstructing cause. In some of the cases related in the paper, it was mentioned that large and distending quantities of air had been thrown into the intestines, with the intention of relieving the obstruction. He doubted the propriety of such a proceeding; for he had observed in practice, and as the result of direct experiment upon the intestines in lower animals, that extreme distension causes paralysis of the intestinal muscular fibres. He could fully confirm an observation the author had made, that although the long tube may have been introduced into the rectum to the extent of two feet or more, instead of its having travelled to an equal length along the intestinal canal, it had actually gone but a very short distance, and had then become coiled upon itself.

Dr. TOWN disagreed with Mr. Hilton in considering a flat or concave state of the abdomen a diagnostic mark of the obstruction being situated high up. He thought that the author was right in the view he had

taken on this point, and related two cases, in which the abdomen was flat and concave, the intestines containing no gas, in both of which instances the obstruction was low down: in one case, a band extended from the ileum to the mesentery, coiling round a fold of intestine; and in the other case, the strangulation was at the internal abdominal ring, though no evidence of its being so situated developed itself before death. The conclusion he had come to, in reference to the flaccid state of the abdomen, in cases of obstruction, was this—that if inflammation existed, tympanitis was present, and if it did not exist, the belly was flat or concave. As to the question, whether, in obstinate constipation, we should, or should not, administer purgatives, he was convinced, that after the first day or two we should do away with purgatives altogether; or, if we did use them, we must employ the gentlest and mildest of these agents. He had not seen cases of this kind cured by means directed particularly to the removal of the obstruction, although, in one instance, the obstruction had yielded to the introduction of a moderate quantity of air into the intestines. He did not advocate the use of a large quantity of air in these cases, as such a proceeding was likely to paralyze the intestines.

Dr. BAIGER remarked, that our diagnosis of the situation of the stricture in cases of internal strangulation was but imperfect, but he had observed, in one or two cases in which the obstruction was situated in the small intestines, the peristaltic action of these could be seen more distinctly than when the obstruction was in the colon. There was, however, in most cases, excessive difficulty in arriving at a knowledge of the exact seat of the strangulation. He suggested that the paper might be incorrect in its statistics of the fatality of these cases, as it only appeared to embrace those instances of the disease which might be almost considered hopeless, for it was well known to what a great extent, as to time, obstruction might exist, and yet the patient get well, contrary to the expectation of the practitioner in attendance. He remembered several cases of this kind, in which the operation proposed might have been resorted to, as apparently the last and only remedy. He related one case in which constipation, with vomiting, had existed for six weeks, the abdomen eventually becoming as large as that of a pregnant woman at the ninth month. This patient eventually did well. In these cases, all violent means, whether purgatives or others, should be avoided after the first few days, the patient receiving more benefit from mild and gentle remedies.

Dr. COPLAND thought, that in these cases, after the first day or two, all active purgatives should be avoided. He related

two cases of obstinate constipation, attended by vomiting and unaccompanied by inflammation. The first of these was the case of a woman in whom the obstruction continued for three or four weeks. For several years previously she had been in the habit of chewing and swallowing sealing-wax. Drastic purgatives were given at first, but soon discontinued, and after soothing the stomach, she was ordered to take a teaspoonful of sweet oil several times a day, and to use an injection of the same agent twice in that period. Eventually, large masses, consisting of agglutinated portions of sealing-wax, were evacuated, and the patient did well. In the other case, the woman was twenty-seven years of age, and had been long in the habit of chewing her curl-papers. Symptoms of obstruction came on, which, under similar treatment to that employed in the last case, gave way, and sixteen or seventeen large balls like hen's eggs, came away, consisting of hair-paper.

Mr. TRAVERS remarked, that the subject under discussion was almost unapproachable, both from its wideness and the difficulty of our diagnosis in cases of internal obstruction. In fact, cases of this kind appeared to him to be beyond the pale of surgical assistance, but after the extraordinary cases in surgery which had occurred of late, he should not be surprised at anything. With respect to the statistical report which had been given in the paper, it was, no doubt, of value; but he could not help cautioning the meeting against taking literally all the statements made. He considered that the cases referred to by the last speaker were not such as were meant to be discussed by the author of the paper, who had confined his observation to cases of volvulus, fungous tumors in the alimentary canal, to stricture, an envelopment of a portion of intestine by some adventitious membrane, or its passage through a breach in some membrane, and to invagination. Now he (Mr. Travers) considered the simple questions to be discussed were these:—First, do obstructions dependent on any of these causes admit of being localized in such a manner as to guide the surgeon in any operative procedure he might think it desirable to undertake; and, secondly, were we justified in exploring the abdomen to ascertain the nature and seat of the obstruction, with a view to its removal. His own experience was, that the case was hopeless at the time when any operation would be justifiable. Before such a proceeding would be warrantable, ileus of such a character as not to be relieved must exist, and with this, inflammation to such an extent as not to allow of further delay. Well, then, if the surgeon could diagnose, with tolerable accuracy, the seat of an invagina-

tion for instance, and explored the abdomen, the intus-suscepted portion of intestine could not be drawn out so readily as the paper would lead us to suppose; for in consequence of the inflammation which had existed, or did exist, the serous membrane of one portion of intestine had become so agglutinated to the mucous membrane of the other, and become so thickened, as to make it almost impossible to separate the united portions. With regard to the cases which had convalesced under the care of Dr. Bright, and cases of a similar kind, the obstructions here were evidently not the result of stricture of intestine by a divided mesentery or adventitious band, or from stricture, but were dependent upon some absorbable tumor which compressed the canal. Cases of this kind were not uncommon, but if the tumors were of a malignant character, recovery was not to be expected. He had at present under his care a young gentleman suffering from some morbid condition of the intestinal tube just below the umbilicus; he had suffered for some months from attacks of a spasmodic character, which came on when the bowels were constipated, and were only removed by the mildest purgatives and the most gentle means. In conclusion, he might observe that the class of cases described in the paper were generally of a hopeless character; every case was of itself a study, each one being different, and the causes so various, that we could not generalize on the subject.

Dr. COLBY briefly observed, that in cases of invagination the adhesion alluded to by Mr. Travers would not exist in all cases, as post-mortem examinations had revealed.

Mr. TRAVERS explained, that in all cases he believed such adhesion would exist at the period when any operation would be justifiable.

Mr. PHILLIPS rose to reply, and said that he had adopted the best course he could in his paper; he had not trusted to his own experience, which had been limited on the subject, but he had collected a large number of cases from all available sources, and drawn such deductions from them as their histories seemed to justify. The abstract of the paper read before the Society had necessarily omitted, or abbreviated, some portions of the paper, which, had it been read in full, might have made some points clearer and more demonstrative. There were so many exceptions to all general rules, in the cases detailed, that he could offer no generalization further than he had attempted. With reference to the remark of Mr. Travers, respecting the impossibility of withdrawing an invaginated portion of intestine, he could only observe, that in some of the cases of his disease which he had narrated, and which appeared to bear internal marks of correct-

ness, operations had been performed, the invaginated portion of intestine withdrawn, and the patients recovered. He could offer no remarks on the statistics of recoveries in these cases, as alluded to by Dr. Bright, and could only say, that he had taken facts as they were. The 169 cases to which he referred were complete in themselves, but he by no means meant to assert, that these comprehend all the cases which had occurred.

SOUTH LONDON MEDICAL SOCIETY.

Nov. 11, 1847.

Dr. HUGHES, President, in the Chair.

Mr. WAYNEWORTH, at the termination of the reading of the minutes, stated that the gentleman whose case was related in his paper had since died, and the only morbid states found were as follows:—A few slight spots of opaque fluid on the arachnoid of the anterior part of the anterior lobes of the brain; a patch of the same character on the vertex near the longitudinal fissure, having a somewhat cheesy look and feel, and resembling disorganized Pechionian bodies; the membranes were otherwise healthy, but contained about four ounces of fluid; the substance of the brain was firm and healthy, and the brain altogether large in proportion to the body. The cerebellum and its investing membranes were healthy. No disease of the medulla oblongata. On exposing the spinal column, a very strong smell of uræa was present, and about an ounce and a half of fluid was discovered.

Mr. REMINGTON read a case of

Difficult Parturition.

The patient, a short woman, *æt.* 29, had been once pregnant, but miscarried, and was, when the author was summoned to attend her, at the full time of her pregnancy. The liquor amnii had escaped some hours, and the pains, although feeble, were constantly recurring. On a vaginal examination, the os was found scarcely open, the head presenting, but high up, and there was considerable pelvic deformity, the pelvis itself being small; the brim contracted antero-posteriorly by the jutting forwards of the sacral promontory; the linea ilio-pectinea sharp; the sacrum much curved; the coccyx turned forwards, and unyielding; the outlet narrowed antero-posteriorly by the projecting coccyx; the arch of the pubis was also diminished. There was little change in the patient's state throughout the day, or on the following morning. There being no constitutional disturbance, and no further dilatation of the os, it was determined to give a fair trial to the natural efforts. On

the succeeding morning scarcely any alteration had taken place in the condition of the os, which was soft, moist, thin, and about the size of a half-crown. The pains were constant and strong; the pulse more frequent, but soft and compressible; the skin moist, and no abdominal tenderness; the urine was drawn off; an aperient given, followed by quarter of a grain doses of tartar emetic every four hours, and external fomentations, but without much, if any, relief. Towards the close of the day, there being little alteration in the state of the os, the face flushed, the patient anxious, and the pains constant and wearing, but without cerebral disturbance or abdominal tenderness, Dr. Lever was requested to see the case. He coincided on the propriety of abstaining from instrumental aid at present, and advised the continuance of the tartar emetic, the administration of an aperient, followed by an opiate injection. On the following morning the patient was more composed; the pains were still frequent and strong; the os uteri rather more dilated, hot and dry; the pulse 100, compressible; the tongue furred, with slight thirst and headache. The urine was again drawn off; the fomentations continued, and Extr. Belladonna applied to the os. Towards evening her condition was as follows: headache; face flushed and anxious; pains frequent; tongue brown and dry; pulse 126, small and easily compressible; strength failing, but no abdominal tenderness; vaginal secretion rather offensive; condition of os and fetal head (which was moveable) much the same. Labour having now been protracted two days and a half, it was agreed to deliver her, and the bladder having been emptied, and the woman placed in the usual position, Dr. Lever made two slight incisions with a knife in the os uteri to relieve the tension, and then proceeded to perforate the head: the child was extracted without more than the ordinary effort on the part of the operator; and the placenta being removed, a dose of ergot was given to ensure contraction, and the patient progressed favourably to convalescence.

The author concluded by drawing attention to the healthy condition of the patient, as conducing to so favourable a termination of the case, as previous disease of the peritoneum or pelvic viscera would have diminished the chances of recovery. He adverted to the propriety of performing an operation, where such is necessary, before much constitutional irritation is set up, and considered the course and termination of the case narrated in no way invalidated the important rule, "to give a fair trial to the natural efforts even in cases of pelvic deformity."

Mr. WATERWORTH agreed in the treatment adopted, and should even have felt inclined to have had recourse to venesection in addition, to relax the rigid os, as he had found much benefit from such practice. In regard to antimony he had found very small doses frequently repeated much more efficacious than larger doses, which are apt to excite disagreable vomiting.

Dr. MURPHY thought delivery might have been hastened if mechanical dilatation by the fingers had been used. He did not see the use of the tartar emetic being employed, more particularly after rise of the pulse, which was, in his opinion, an indication of debility. He considered it a safe rule to deliver when this took place.

Dr. LEVER viewed tartar emetic almost as a specific in relaxing a rigid state of the os. In his experience no remedy could be compared to it, especially when followed by a dose of opium. The feeble state of pulse, in the case related, negatived venesection, and, as a general rule, he did not think its use to be as highly recommended as that of antimony, being apt to leave an inert and ill-contracted state of womb, and more tardy convalescence. The necessity of instrumental aid, in the above case, was thought of from the first, and he highly approved of its use not being deferred until those symptoms of exhaustion mentioned by many authors should appear, as in such cases patients rarely would recover the shock of the delivery, and he viewed the successful termination of the present case as attributable to the well-timed interference.

Dr. MURPHY thought that in these cases death took place rather from pure exhaustion than from peritoneal inflammation, and inquired of Dr. Lever the propriety of performing the Cæsarean operation in such cases, as a means of saving the child's life as well as the mother's, and alluded to the practice of the continental obstetricians.

Dr. LEVER could not consider the life of the child as at all to be compared in importance with that of the mother, and when the slight danger attending instrumental aid was compared with the great hazard of the Cæsarean section, he did not think recourse to the latter could be at all justified, more especially as by the former we were only sacrificing a being having little or no claims on society, while, on the contrary, by the latter operation we were placing the life of a responsible being in the greatest jeopardy; such was his opinion, as he believed it was of every British obstetrical practitioner.

Mr. HICKS, alluding to the practice of venesection, for his experience in the efficacy of which in such cases he was indebted to Mr. Waterworth, believed that no remedy at all equalled it, especially when followed by a

full dose of opium—relieving as it does the febrile state of system, the hot and dry condition of vagina, as also the rigid state of the os uteri, and promoting a free vaginal secretion, so highly beneficial in all cases of difficult parturition, nor had he noticed the inert condition of uterus or the tardy convalescence alluded to by Dr. Lever. Women appeared to him to bear loss of blood better at these times than at other periods. He did not, however, intend in his remarks to allude to the case related, but rather to the propriety of such treatment in these cases in general.

Dr. LEVER had found that in country practice such treatment could be borne, but in town he believed the treatment by tartar emetic would be found the safer practice, although there were cases in robust strong women which might require depletive measures. In answer to a question from Mr. Remington, in regard to the efficacy of a combination of digitalis and tartar emetic, he stated that he had once tried it, but its effects were such as to determine him never to repeat it, or recommend its adoption by others.

Mr. WATERWORTH inquired of Dr. Lever whether he was in the habit of employing a compress over the uterus in addition to the bandage after delivery; he never did this in his practice, and he had never known any injurious effect arise from not doing so.

Dr. LEVER stated that the plan he both used and taught was to place a bandage round the abdomen at the commencement of labour, and to tighten it as this progressed, and on its termination to do so still more, with the addition of a compress, should the abdomen be flat or the hips projecting. He believed this plan both prevented hæmorrhage and afforded comfort to the patient.

Mr. TAYLOR inquired whether, in the event of the woman again becoming pregnant, it would be advisable to induce premature labour at seven or eight months.

Dr. LEVER and Mr. WATERWORTH both agreed in the propriety of allowing her to go to the full period of utero-gestation, as in many cases patients who had suffered severely in their first had had good after labours, probably from the head not being so firmly ossified, and consequently better able to adapt itself to any narrowing of the pelvic passages.

Thanks were then given to the author of the paper, and the Society adjourned.

At the next meeting, November 25th, Dr. MURPHY will read a paper on the varieties of Headache.

Medical Intelligence.

UNIVERSITY OF LONDON.

M.B. SECOND EXAMINATION.—1847.
PASS EXAMINATION.

Monday, Nov. 1.—Morning, 10 to 1.

Physiology.

Examiner, Dr. CARPENTER.

1. What are the principal components of the blood in vertebrated animals,—their respective characters, properties, and uses, in the economy,—their chief diversities in the several classes of this sub-kingdom,—and their proportions in the healthy human system?

2. State the essential nature of the respiratory process; the purpose which it answers in the economy; the causes which ordinarily render its continuance essential to life; the circumstances under which it may be temporarily suspended without injury to the system; and the changes which it normally produces in the blood and in the air respectively.

3. Describe the apparatus provided for the aëration of the blood in the following classes of animals:—echinodermata, bivalve mollusca, insects, fishes, reptiles, birds, and mammalia; and give an account of its operation in each case.

4. Describe the structure and actions of a gland, according to modern views; trace the gradual development of the liver through the principal series of invertebrated animals; describe the chief varieties presented by the structure of the kidney in the different classes of vertebrata; and give an account of the chief components of the urinary secretion, and of their respective sources.

5. Give an account of the structure of the nervous system in the centipede; compare its parts with those of vertebrata; describe its actions; and point out the bearing of the whole on the doctrines of reflex action.

6. Describe the general structure of the encephalon in each of the four classes of vertebrata; and state the physiological inferences which may be deduced from the comparison of these different types.

7. Upon what chemical process is the maintenance of animal heat chiefly dependent; how is this maintained in the bodies of man and of carnivorous and herbivorous animals respectively; and what are its relations to the presence of fat in the animal body?

8. Describe the apparatus by which the embryo obtains its nourishment from the contents of the ovum in the oviparous verte-

brata; the provisions for the aëration of its blood; and the manner in which these are combined in the placenta of mammalia.

Afternoon, 3 to 6.

General Pathology, General Therapeutics, and Hygiene.

CELSUS DE RE MEDICA.

Examiners, Dr. BILLING and Dr. TWEEDIE.

1. Explain what is meant by transformation of tissues, and under what circumstances it may take place. Give a few examples in illustration.

2. Describe the physiological effects of cold on the living body. State the various purposes for which it is used as a therapeutic agent. Mention the forms in which it is employed in the treatment of diseases, with the special rules for its administration.

3. Describe the injurious effects that result from neglect of proper exercise. Sketch the different kinds of exercise—1, as a hygienic, and 2, as a curative agent, with the special rules of application.

4. Translate the following passage into English:—

Faucibus subest stomachus; in quo plura longa vitia incidere consuerunt. Nam modò ingens calor, modò inflatio hunc, modò inflammatio, modò exulceratio afficit: interdum pituita, interdum bilis oritur; frequentissimumque ejus malum est, quo resolvitur: neque ullâ re magis aut afficitur, aut corpus afficit. Diversa autem ut vitia ejus, sic etiam remedia sunt. Ubi exæstuat, aceto cum rosâ extrinsecus subindè fovendus est, imponendusque pulvis cum oleo, etc. a cataplasmata quæ simul et reprimunt et emolliunt. Potui, nisi quid obstat, gelida aqua præstanda. Si inflatio est, prosunt admotæ cucurbitulæ; neque incidere cutem necesse est: prosunt sioca et calida fomenta, sed non vehementissima. Interponenda abstinencia est: utilis in jejuno potio est absinthii aut hyssopi aut rutæ. Exercitatio primò lenis, deindè major adhibenda est; maximèque quæ superiores partes moveat: quod genus in omnibus stomachi vitiis apertissimum est. Post exercitationem opus est unctione, frictione; balneo quoque nonnunquam, sed rarissimum; interdum alvi ductione; cibis deindè calidis, neque infantibus; eodemque modo calidis potionibus, primò aquæ post, ubi resedit inflatio, vini austeri.

Tuesday, Nov. 2.—Morning, 10 to 1.

Surgery.

Examiners, Sir STEPHEN HAMMICK and Mr. CÉSAR HAWKINS.

1. What is Delirium Tremens Traumaticum? Under what circumstances is it most likely to occur? Describe the symptoms, and how they are to be distinguished

from those of inflammation of the brain; and mention the proper treatment, under the mildest and most aggravated forms.

2. Describe the various dislocations of the femur at the hip-joint; and the signs of the injury, according to the several positions of the displaced bone; distinguishing between each form of dislocation and other accidents for which it may be mistaken; give the method of reduction in each case respectively, mentioning the general, as well as the local measures necessary.

3. Describe the symptoms, causes, and treatment, both local and general, of different cases of senile gangrene of the toes or leg, according to the depth and extent, and to the acute or chronic nature of each case; or the age, habits, and state of the constitution of each individual.

Afternoon, 3 to 6.

Medicine.

Examiners, Dr. BILLING and Dr. TWEEDIE.

1. Describe the anatomical characters of inflammation of the digestive mucous membrane.

2. Enumerate the causes under the influence of which hæmatemesis may arise. Explain the sources of the hæmorrhage, and the principles of treatment.

3. Describe the intra-cranial lesions which give rise to paralysis.

4. Explain how serous effusion takes place in cardiac dropsy. What lesion of the heart most frequently induces it?

5. Give a definition of purpura. Describe its varieties, and the treatment applicable to each.

6. Sketch the diseases to which the windpipe (including the larynx) is liable, with an outline of their treatment.

Wednesday, Nov. 3.—Morning, 10 to 1.

Midwifery.

Examiner, Dr. RIGBY.

1. Describe the various sympathetic affections produced by pregnancy, their nature, and treatment.

2. Describe the causes of faulty uterine action, and the treatment.

3. Describe the symptoms, causes, and treatment of after-pains.

Afternoon, 3 to 6.

Forensic Medicine.

Examiners, Prof. BRANDE, Dr. PEREIRA, and Dr. RIGBY.

1. Bisulphuret of ammonium has been proposed as a test for hydrocyanic acid. Describe the mode of using it, its effects, and the nature of the chemical changes which ensue.

2. The earth of a grave in which a body has been interred is stated to contain arsenious acid, either free or in some combination. How would you proceed to determine these points?

3. In the case of a person poisoned by belladonna, how would you proceed to ascertain the presence of the active principle of this poison in the urine?

4. Describe the symptoms and treatment of poisoning by white lead.

5. Where a knot upon the cord is assigned as the cause of the child's death, how would you determine whether it had been formed before birth or wilfully tied afterwards?

6. State what you know of uterine auscultation in pregnancy.

UNIVERSITY OF LONDON—SECOND EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE, 1847.

First Division.—Beck, Thomas Snow, University College; Bose, Bholanath, University College; Brinton, William, King's College; Crisp, Henry, King's College; Eade, Peter, King's College; Forster, John Cooper, Guy's Hospital; Fotherby, Henry Isaac, Guy's Hospital; Greenwood, William Henry, Guy's Hospital; Hicks, John Braxton, Guy's Hospital; Holman, William Henry, London Hospital; Johnson, Walter, Guy's Hospital; Littleton, Nicholas Henry, University College; Monckton, Stephen, King's College; Ramskill, Jabez Spence, Guy's Hospital; Ransom, William Henry, University College; Rygate, John James, London Hospital; Seal, Gopal Chunder, University College; Wigglesworth, Henry, University College. *Second Division.*—Green, Thomas, Royal College of Surgeons in Ireland; King, George Henry, Guy's Hospital.

DISCOVERY OF A SUBSTITUTE FOR ETHER VAPOUR BY PROFESSOR SIMPSON.

OUR space does not permit us this week to do more than announce the discovery, by Professor Simpson of Edinburgh, of a new anæsthetic agent, which is in many respects preferable to the use of ether vapour in surgical operations. This is the singular compound known to chemists under the name of *Chloroform*, or *Perchloride of Formyle*. The results have so far proved most satisfactory. We shall not anticipate the description of the mode of employing, and of the effects of this new agent, which has been forwarded to us by Professor Simpson, as we intend to publish his communication it full length in our next number.

THE CHOLERA IN RUSSIA.

THE German papers give official data from the Russian capital, which inform us that in Moscow, from the 30th of September to the 19th of October (19 days), 222 persons were attacked by cholera, of whom 66 died. In the provincial districts of the empire the last list of deaths amounts altogether to 208. In intelligence from Stockholm, dated November 2, it is announced that the cholera is travelling on with such speed that it is now scarcely 18 miles distant from St. Petersburg, and will doubtless soon appear in the capital itself. In Moscow it has assumed a comparatively mild character. Letters from Copenhagen, dated November 6, state that influenza is generally prevalent in that city, and that nearly all the performers at the theatre were laid up with it.

BOTANICAL PRIZES OF THE APOTHECARIES' SOCIETY.

THE prizes annually awarded by the Society of Apothecaries to medical students for proficiency in Botany and Materia Medica, were, on Wednesday last, presented by Edward Bean, Esq. the Master of the Society, to the successful candidates. Mr. John S. Bristowe, of St. Thomas's Hospital, received the Botanical gold medal. Mr. George Thomas Jones, of University College, the Botanical silver medal and prize books; and Mr. William Bayldon, of University College, received a Botanical prize of books. Mr. J. W. B. Steggall, of Charing Cross Hospital, received the Materia Medica gold medal; and Mr. Benjamin Davies, of University College, the Materia Medica silver medal. The examination for the Botanical prizes had been conducted by Mr. N. B. Ward, and the examination for the Materia Medica prizes by Dr. Copland.

KING'S COLLEGE MEDICAL SOCIETY.

Session 1847-48.

President for the year.—Richard Partridge, F.R.S. *Vice-Presidents.*—T. O. Rayner, M.D.—A. Smee, Esq. F.R.S.—F. Hensley, Esq. B.M.—R. Drutt, Esq. F.R.S.—E. J. Chance, Esq. F.R.C.S.—W. H. Parsey, Esq. B.M. *Treasurer.*—S. Griffith, Esq. M.R.C.S. *Honorary Secretaries.*—J. T. Arlidge, Esq. B.M.—Robert Bentley, Esq. M.R.C.S.

The meetings of the Society are held at King's College every Thursday evening, at 7 o'clock, P.M.

LEGAL MEANING OF THE TERM "DISLOCATION."

AN action was lately brought against a medical practitioner for negligence in the treatment of a dislocation of the arm, and a verdict was returned for the plaintiff. Last week Mr. Knowles applied to the Court of Queen's Bench for a rule to shew cause why

there should not be a new trial, on the ground of a misdirection of the learned Chief Baron, who tried the case. The declaration alleged that the plaintiff had employed the defendant, who was a surgeon, for the treatment and cure of certain *wounds, fractures, bruises, complaints, and disorders*; but the evidence shewed that the defendant had been employed to cure the plaintiff of a *dislocated arm*. He (the learned counsel), at the close of the plaintiff's case, submitted to the learned Chief Baron that there was no word in the declaration which was applicable to the case; but his objection was overruled. A dislocation was neither a wound, bruise, nor fracture; and the words "complaint and disorder" were not at all applicable to a surgical case, but to internal complaints which required to be treated medically. He (the learned counsel) had looked into the dictionary, and could not find that a dislocation was so called.

Lord DENMAN.—It is rather strange that the pleader should have omitted the most appropriate word; but we think the Chief Baron was quite right.—Rule refused.

APOTHECARIES' HALL.

Names of gentlemen who passed their examination and received certificates to practise, on Thursday, Nov. 11, 1847:—Walter Thompson, London—William Braithwaite, Plymouth—William Pearce, Bingley, Yorkshire—Thomas Watson, Bristol—Charles Pratt—John Braxton Hicks, Lymington, Hants—Stewart Blacker Roberts—John Glendavine Winstone, 20, Bowverie Street—Benjamin French, Neath, Glamorganshire—James Lardner Green, Holywell, Flintshire.

OBITUARY.

ON the 18th of September, at St. Helena, Dr. Henry Solomon.

On the 5th inst., at Willoughby, near Spilsby, Lincolnshire, Thomas Brown, Esq., late surgeon at Great Berkhamstead.

On the 10th inst., at his residence, Three Colt Street, Limehouse, Thomas Bailey, Esq., surgeon, aged 59.

On the 25th ult., Mr. John William Joseph Enouy, jun., Student in Medicine, University College, London.

On Monday, the 15th inst. Joseph Toulmin, Esq. of Hackney, in his 76th year.

On the 15th inst. at 2, Jonson's Place, Harrow Road, John C. W. Dyer, Esq., surgeon, aged 38.

The daily journals report the death of M. Dieffenbach, which took place lately at Berlin. He was born at Königsberg in 1795.

Lately, at Lyon, M. le Docteur Nichet, formerly Chief Surgeon of the Hospital of La Charité.

Selections from Journals.

SPECIAL PATHOLOGY.

CASE OF EXTRA PERITONEAL DROPSY. BY S. D. SCOTT, M.D., AND F. C. REAMER, M.D., OF HARRISONVILLE, PENN.

Mrs. S. S., aged 20 years, from her childhood until the 14th year of her age, had been a healthy active girl. Her menses at this period were but lately established, and, by exposing herself to inclement weather, she suffered a suppression of that function, which never afterwards regained a healthy condition, the evacuation at some times being profuse, and at others scanty and imperfect. About two months from the date of this menstrual derangement, her abdomen was noticed to be somewhat enlarged, which at first created a suspicion of pregnancy, but which opinion, in course of time, was abandoned, and the girl looked upon as one becoming dropsical. The swelling increased but slowly until after marriage, which occurred before she reached her seventeenth year. At the end of two months after marriage, it was perceived that she increased more rapidly than she had done before, but enjoyed tolerably good health, and continued to discharge her household duties for one year, when it was found necessary to relieve her by tapping. This was done in the early part of May, 1842. There were obtained from her at this time seventeen gallons of a serous fluid. Subsequently to this, and before Dr. Scott had an opportunity of seeing the case, she was tapped twice: once in August, 1843, about nineteen months having intervened since the first operation, and again in February, 1844. At the first of these latter operations there were abstracted nineteen and a half gallons of serum, resembling that which had been obtained at the first operation.

Dr. Scott saw and examined the case for the first time on the 3d May, 1844, at which time she was about to undergo a fourth operation. Since the last tapping, until a few days of the time at which I saw her, she had been able to move through the house with tolerable ease, but could not lie down at night, having to be supported in a sitting posture while she slept. She measured at this time around the most projecting part of the abdomen, six feet and three inches.

Fifteen gallons of serum were removed by this operation, which was a smaller quantity than might have been obtained had it not been that there existed some obstacle to the free discharge of the fluid, which protracted the operation, and exhausted the patient to such a degree that it was thought unsafe to allow the canula to remain until all the fluid

would have been evacuated. Upon examining the abdomen after the operation, a very large tumor was found to exist in the right side, occupying the hypochondriac and lumbar regions, and extending as far forward as the epigastric. This tumor was regarded by all who examined it as the liver much enlarged and indurated. The only pain she ever complained of existed in this tumor. Extending to the left, and occupying the hypogastric, pubic, and right iliac regions, was another large tumor, apparently attached to the inferior portion of the one just described; and, deeply seated in the hypochondriac and lumbar regions of the left side, there could be felt a third tumor, which at that time appeared to be about as large as a man's head. This was pronounced by all to be the spleen greatly enlarged. The fluid was supposed to occupy the cavity of the peritoneum, and the cause of its accumulation some obstruction in the portal circulation, which obstruction, it was thought, existed in the liver. On the 1st of July she was tapped for the fifth time, about seventeen gallons and a half of yellowish green serum being removed. On the 2d of September the operation was repeated, with similar results; and between this date and May 25th it was found necessary to have recourse to it seven times. After the last operation her strength declined rapidly, until the 4th of June, when she died. A few hours after her death thirteen gallons of serum were removed. The accumulation since the last operation appears to have been at the rate of one gallon p. r. day. She was tapped fourteen times (including the one after death) in the course of three years, and averaging at each operation sixteen gallons of serum, the aggregate amount being 225 gallons.

Post-mortem examination.—Upon making an incision through the abdominal integuments, there was exposed a very large cavity, which the examiners were surprised to find was not that of the peritoneum, as they had expected; for it was now evident that they had not yet penetrated that membrane. An idea of the extent of this cavity will be formed, when it is remembered that there were nineteen and a half gallons of serum abstracted from it in the second operation. The posterior part of the left hypochondriac and lumbar regions was occupied by a large cyst, containing at least two gallons of perfectly transparent serum: this tumor had been mistaken for the spleen. From the hypochondriac and lumbar regions of the right side was taken a large tumor that would have weighed from twelve to fifteen pounds; upon making an incision into this mass, a number of small cysts were found enclosed within its walls of fibrous matter. From some of these cells there oozed a fluid

much resembling cream in colour and consistence, and in others this fluid appeared to be coagulated, forming a cheesy matter, and in the largest division of cells was contained a transparent serum like that obtained from the left side. This mass externally adhered closely to the lateral parietes of the abdomen, and internally to the peritoneum: it was this tumor that had been considered the liver much enlarged and indurated. Another large tumor, similar to the last, and weighing about eight pounds, occupied the right iliac, the hypogastric, and pubic regions. Adhering in different places to the walls of the large general cavity, from which the immense quantity of fluid was taken, were a number of smaller tumors, varying from one to three inches in diameter, and having a peduncular attachment. The abdominal muscles had almost entirely disappeared, and were replaced by a cellular structure. The peritoneum was very much thickened and indurated; the liver was healthy, and natural in size and appearance; the spleen slightly enlarged; the kidneys apparently healthy. The uterus and its appendages were very slightly examined, but they appeared natural: the contents of the thorax were not inspected.

It is added that Lieutaud, in the "*Historia Anatomo-Medica*," Paris, 1767, vol. i., p. 413 et sequent. introduces several cases of this kind, where there were enormous collections of water, either between the peritoneum and abdominal muscles, or in cysts whose cavities were independent of that of the peritoneum. In one case of cyst, 140 pounds of water, somewhat bloody, (*liquor subernentus*) were found. (See obs. 1726.) In another case, the quantity of fluid contained between the peritoneum and the muscles exceeded that removed from Dr. Scott's patient by forty-four pints.—*American Journal of the Med. Sciences.*

SURGERY.

ON THE TREATMENT OF ABSCESSSES BY SETON.

At a late meeting of the Surgical Society of Ireland, Dr. Darby said that he had recently treated some cases of abscess by seton; and, as it was not a mode of treatment generally adopted, he wished to submit a short account of them to the Surgical Society:—

"In the summer of 1844, I was first induced to try it in the case of a young woman who had an encysted abscess of about an inch and a half in diameter on the side of the neck, which she objected to have punctured, fearing an 'unsightly mark' would remain, and requested I would 'put it back.' This I told her it was impossible

to do, and advised her to let me put a fine thread through it: to this she consented. With a curved needle I inserted a thread of cotton, as a seton through the entire diameter of the abscess, and applied water-dressing over all to obviate inflammation. On the following day, I found pus oozing beside the thread, and in this manner the contents slowly and continually discharged, the cavity gradually contracted, and at the end of ten or twelve days was obliterated. I removed the seton, and after a short time no perceptible cicatrix remained.

"I next treated in this manner a large strumous abscess (about four inches in its longest diameter), which a boy in the work-house had on his sternum, and the case went on more favourably than I think it would have done had I punctured the abscess with the lancet.

"In November last, I was consulted by a lady who, after a severe attack of influenza, had inflammation of some of the cervical glands, situated behind the sterno-mastoid muscle, deep-seated, and midway between the ear and the clavicle. I inserted a thread in this situation, including between the points about two inches of skin; the contents distilled out, but the abscess was fed from that which first formed, and finding that no benefit was likely to ensue, I passed a thread through the original abscess: in two days afterwards I was enabled to remove the first seton, and in six days subsequently, the second. The disease was cured, and the closest observer could not now perceive a trace of either the disease or the operation. I have since treated four cases of strumous abscess in this way with similar results: in one case only did any unsightly cicatrix remain, and this I attribute to the thinning process having advanced considerably before the seton was applied. I have not found any case followed by high inflammation or much pain; in fact, the results have been satisfactory.

"Before concluding, I wish to remark that I have seldom or never had a case where pus was absorbed after I was fully satisfied it had been formed; I should therefore be disposed to insert the seton as early as possible after the formation of pus, and remove it as soon as the cavity of the abscess appeared obliterated. And it is my opinion that this mode of treatment, followed by careful dressing and judicious management, is calculated to obviate in a great degree the disfigurement and annoyance which so frequently result from the ordinary method of treating abscesses, especially those which present in conspicuous situations.—*Dublin Medical Press.*

ANATOMY.

ON THE DEVELOPMENT OF PRIMITIVE NERVE-FIBRES. BY DR. SCHAFFNER.

ON examining the brain of a curval frog in its earliest period of development, nothing is seen but roundish cells, which for the most part are nucleated, and filled with a finely granular material. The cells (primitive cells or nerve-corpuscles) present no difference, beyond their small size, from the nerve-corpuscles in the brain of the adult animal. So soon as the extremities of the larva begin to be developed, there are observed a number of primitive cells, from which one or two primitive fibres proceed; but as yet there are no separate independent nerve-fibres to be found. The spinal cord, which is of a greyish-white colour, and not yet separated into its white and grey portions, is composed, about the same time, of simple round cells, of other similar cells from which fibres are springing, and of primitive fibres themselves. In the grey substance of the brain of adult frogs and tritons, Dr. Schaffner found only nerve-corpuscles and primitive fibres: in the white substance of the spinal cord, primitive fibres alone; and in the grey substance of the same, nerve-corpuscles, from which primitive fibres were proceeding. On comparing these corpuscles with ganglion-globules, whence primitive fibres spring in the ganglia of the sympathetic, these latter will, according to Dr. Schaffner, be found to be six or eight times longer; and in many of them there is perceived, especially after treatment with acetic acid, a distinct membranous sheath, which, he says, cannot be detected in the same structure in the spinal cord. The central nerve-cells, which are prolonged into primitive fibres, maintain, for the most part, their rounded form, though some become oval; all possess the general appearance of other simple nerve-corpuscles. In time, the rounded cells from which fibres arise become gradually drawn out as the growth of the fibre proceeds, and ultimately they entirely disappear, a primitive nerve-tube being the result of their metamorphosis.

A similar metamorphosis of the primitive cells has been observed by Dr. Schaffner in the embryo of man, and of mammalia generally. It is remarkable that the formation of primitive fibres should take place in the peripheral nerves first: the metamorphosis of the cells being observed first in the spinal cord, and only subsequently in the brain.

With regard to the nuclei which are frequently observed on young nerve-tubes, but not on older ones, and which are commonly regarded as the nuclei of the original cells from which the tubes are formed, Dr.

Schaffner observes, that the nuclei of the cells are situated within the tube, and are therefore invisible; while those commonly perceived are situated on the outer wall, and that they must therefore be looked upon as secondary formations, occurring after the coalescence of the cells from which the tube is formed. Possibly they are of the same nature as the free nuclei observed in the indistinctly fibrous substance which, together with primitive cells, constitutes the material in which the development of peripheral nerve-tubes takes place.

Each primitive cell from which the central nerve-tubes originate, usually give rise to two tubes, which spring from opposite points, and, as the development proceeds, the walls of the cell are gradually drawn out in opposite directions, and merge into those of the two nerve-tubes. Occasionally only one tube is observed proceeding from a cell; but in this case it is probable either that the other is broken off, or is situated at the under side of the cell, and thus concealed from view. It appears most probable also that the tubes from one cell coalesce with those from another, and that thus the individual nerves increase in length; for it is not uncommon to perceive two or three cells connected to each other by fine tubes. Early-formed nerve-tubes do not contain any medullary substance; so that this must be a deposit of later formation.—*Schmidt's Jahrbücher*, Nr. 8, 1847.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Nov. 6.

BIRTHS.	DEATHS.	Av. of 5 Awt.
Males.... 682	Males.... 529	Males.... 528
Females.. 664	Females.. 538	Females.. 516
1346	1067	1046

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—*Registrars' Districts*, 120.
Population, in 1841, 1,915,104.)

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 361,326)	151
NORTH—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 366,303)	207
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	189
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 393,247)	221
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich .. (Pop. 479,469)	264
Total	1052

CAUSES OF DEATH.

ALL CAUSES	1852	1851	1850
SPECIFIED CAUSES	1052	1051	1030
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	326	311	
<i>Sporadic Diseases, viz.—</i>			
2. Dropsy, Cancer, &c. of uncertain seat	105	104	
3. Brain, Spinal Marrow, Nerves, and Senses	120	157	
4. Lungs and other Organs of Respiration	261	233	
5. Heart and Bloodvessels	40	34	
6. Stomach, Liver, and other Organs of Digestion	85	74	
7. Diseases of the Kidneys, &c.	17	9	
8. Childbirth, Diseases of the Uterus, &c.	13	14	
9. Rheumatism, Diseases of the Bones, Joints, &c.	11	7	
10. Skin, Cellular Tissue, &c.	3	3	
11. Old Age	43	65	
12. Violence, Privation, Cold, and Intemperance	8	29	

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	26	Convulsions	30
Measles	71	Bronchitis	40
Scarlatina	64	Pneumonia	68
Whooping-cough	0	Phthisis	118
Diarrhoea	0	Dia. of Lungs, &c.	12
Typhus	80		
Dropsy	15	Teething	8
Sudden deaths ..	11	Dia. Stomach, &c.	7
		Dia. of Liver, &c.	3
Hydrocephalus ..	25	Childbirth	10
Apoplexy	13	Dia. of Uterus, &c.	3
Paralysis	23		

REMARKS.—The total number of deaths was 62 above the weekly autumnal average.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	30.7
“ “ Thermometer	50.5
Self-registering do. max. 62° min. 37.5	
“ in the Thames water — 51.5 — 50.8	
a From 13 observations daily. b Sun.	

RAIN, in inches, 0.39: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 1.6° above the average of the month.

NOTICES TO CORRESPONDENTS.

The letter of “A Union Surgeon” will appear in the following number.

If our Lynn correspondent will forward us a short letter on the original views of Cholera, &c. by one who we admit is a very eminent practitioner, we shall be happy to insert it. His present communication is inadmissible.

Mr. J. Jones, Llanfair.—There is at present no prospect of the publication of the lectures being resumed. The Association includes a highly respectable body of men, and deserves the support of provincial practitioners. A letter addressed to the Secretary would procure the information required.

A full account of the history and progress of the Asiatic Cholera of 1831-2 was published in the 38th volume of this journal, page 341.

Communications have been received from Dr. Dick, Dr. Simpson, Dr. C. Searle, Dr. Stratton, and Mr. E. H. Durdin. The present number was completely filled before any of these papers had reached us.

Lectures.

COURSE OF SURGERY,

Delivered in the years 1846 and 1847,

By BRANSBY B. COOPER, F.R.S.

Surgeon, and Lecturer on Surgery at Guy's Hospital.

LECTURE XV.

DISEASES OF THE BONES.

Physical properties of bones—evidence of their vitality.—Diseases of bones modified by their earthy matter—their growth retarded by earthy matter.—Bone-earth taken into the blood by action of stomach.—Digestion, elimination, absorption, diathesis, may interfere in the formation of bone.—Blood, capillaries or tissue may fail.—Scrofula.—Necessity for constitutional remedies rather than mechanical.—Chemical treatment.—Hypertrophy—general—partial—may or may not be disease.—Exostosis—when interfering—diagnosis—treatment.—Operation—modes; Sir Astley Cooper's.—Cases.—Exophthalmia—Hydrophthalmia—diagnosis; Dr. O'Beirne's.—Structure of exostoses—hereditary tendency.—Atrophy of bone—in youth—in old age.—All bones not equally subject to atrophy, nor even all parts of the same bone.—Atrophy of neck of thigh-bone.—Rachitis, whether depending on error in blood, capillaries or tissue.—Fragilitas ossium also atrophy.—Distortion of spine—treatment.

I THINK I hear some of you say, "Well, I am glad we have done with inflammation at last; we shall no doubt now really get some 'surgery!'" But depend on it, gentlemen, that unless you have made yourselves acquainted with the vital phenomena essential to health, and concomitant with disease, it is impossible that you should be able to understand the practice of surgery, as you cannot have learned to appreciate the causes of the deterioration leading to the necessity for surgical interference, unless you have duly investigated the healthy processes of nutrition.

Upon first taking a human bone in your hand for examination, you may probably ask yourselves, if it be possible that such a solid mass (the characteristic hardness of which constitutes the peculiarity of the osseous system) could be subject to the same changes and vital influences which attend the growth, reparation, and diseases

of the softer and more delicate structures of the living body.

This, however, is indeed the case: the bones inflame, ulcerate, and become gangrenous, like all other tissues, and, like them, they are perfectly organised, and constitute as completely living parts of the living organism: moreover, when broken, they are capable of reparation from their own vital energy.

But it is nevertheless true that bones fall into a state of disease more slowly than the soft parts of the body, and, having become diseased, are proportionably tardy in the natural processes of restoration; this is owing to the earthy matter which enters into their composition, namely, the phosphates and carbonate of lime.

Bones consist, also, of organized animal matter, cartilage, and gelatine, and it is the admixture of the earthy with the animal substance that constitutes the great difference between the bones and all the other structures of the body.

Even the natural growth and healthy changes in bone are much slower than in the other structures, and you may observe that the animal parts are much earlier formed than the earthy constituents, for it is not until after the period of puberty that bones contain their due proportion of earthy matter; and this is the case also in their reparation after disease or accident.

As all the bones do not possess the same proportions of earthy and animal matters, it is obvious why their periods of development should not be simultaneous, and also why some bones run more rapidly into disease than others. Hence we find the round bones and the articular extremities of the long bones pass through all the phenomena of disease much more rapidly, and are developed earlier during the natural growth of the body, than the more compact parts of the osseous system.

The earthy matter of bones is generally described as inorganic, and so, chemically speaking, it must be considered; but its presence in certain tissues of the living body is essential to their healthy condition, and it therefore contributes as much to their vitality as the animal parts, and is supplied in the same manner from the food taken up by the blood, from which it is conveyed by the capillaries, and is there eliminated by a very elaborate apparatus adapted for the nutrition of the osseous system. The bones must not, therefore, be merely estimated from their physical properties, but from the important office they are destined to perform as constituting, in the animal economy, an organized system, undergoing, like all other parts, constant change from a reciprocal action of the absorbents and capillaries. Having mentioned that the constituents of

the bones are, like all the other tissues, conveyed into the system by the food, I think it will not be considered out of place if I give you a short description of the process of digestion which takes place in the stomach for the conversion of certain parts of the ingesta into bone; for I feel certain that the greater the number of circumstances I can bring before you connected with the economy of the osseous system, the more you will be interested; and, at the same time, you will more readily comprehend the various phenomena relating to the growth, maintenance, and diseases of this system.

Before the food (which is composed more or less of every constituent found in the blood) is swallowed, it undergoes trituration by the action of the teeth, just as the chemist pulverises a substance in a mortar before he exposes it to the operation of a reagent in order to effect its solution, or otherwise promote chemical action; the food is also mingled with the saliva and other fluids before it is conveyed into the stomach. There, it is exposed to the action of free hydrochloric acid, which, having first coagulated the albuminous matter, dissolves it, and all the other animal as well, as earthy substances, and thus renders them fit to be converted into chyle, and ultimately into blood, which is then conveyed to the right side of the heart by the veins, thence to the lungs to get rid of carbon, and absorb oxygen; it is returned to the left side, or systemic heart, to be circulated for the purposes of affording nutrition to all the parts of the body. If this, however, were the only action going on, the growth of the animal frame would be unlimited, but, on the contrary, you observe that the natural size of all living animals is preserved within certain bounds; and this symmetry is maintained by a change which is continually being produced on all living structures; they are constantly undergoing disintegration, or proximate decomposition, as well as resolution into their ultimate elements in a somewhat inverse order to that in which they were originally formed. They are then taken up by the absorbents as effete matter. So that as long as there is a reciprocal and equable action between the capillaries and the absorbents, the normal size and condition of the living body must always be preserved.

I beg you to observe, therefore, gentlemen, what the result must be if there is any constitutional derangement, either temporary or diathetic, which interferes with this process of nutrition; every structure in the body must necessarily suffer: in consequence of the blood not being nourished, therefore, the constituents of the food, which would, under a healthy performance of the digestive functions, have been converted into the

materials for the blood, are thrown off as excrementitious matter, and a general marasmus ensues.

Or if any tissues be at fault (taking, for instance, the osseous system) and incapable of affording the arrangement fitting it to receive the appropriate constituents essential to its integrity, not only does mischief arise from the bones losing their necessary supply of nutriment, but the whole mass of the blood itself becomes deteriorated from retaining ingredients which ought to have furnished nourishment to the bone; hence the centre becomes secondarily affected, and universal disease established. Thus it is that phosphate of lime becomes deposited in the tissues of the body which should not contain such an ingredient; and very important vital functions are frequently interrupted by its presence, especially when the heart or arteries become ossified—a condition which not unfrequently proves destructive to life. Angina pectoris, gangrena senilis, and cerebral disturbance, are instances of fatal affections resulting from this cause.

I have already mentioned that the elimination of the earthy constituents of bone from the blood is a slow process even in the most healthy condition of the body, and you may readily conceive that any deviation from a healthy action, or the operation of any deteriorating influence, would immediately tend to interfere with the due development of the osseous system, whether it originated from constitutional or local defects.

Instances of such interruptions to the development of bone are constantly, gentlemen, brought before our notice in the numerous cases of scrofula which are admitted into this hospital, a large proportion of which are the subjects of diseased bone.

Surely we may learn from this fact how much depends upon dietetic observances in the treatment of diseased spine, rickets, and scrofulous joints, and how necessary is the adoption of those rules which are best adapted to restore nutrition by improving the general health of the patient, and by increasing the assimilative powers, instead of, as is too frequently the case, directing all our attention to the adoption of mechanical means to support the weight of the body, and thus only to attempt to obviate the deficiency of the abnormally constituted bones.

There is every reason to believe that "mollities ossium" often depends upon the want of power in the organs of assimilation to render the phosphate of lime contained in the food fitted to be taken up by the absorbents, and by them conveyed to the blood. If such be the case, phosphate of lime cannot be eliminated from the blood by the capillaries of the osseous system, and the bones will consequently be deficient in

earthy matter. This may also occur from a particular kind of food not containing a sufficient quantity of phosphate of lime to furnish the supply required by the bones; hence they may remain soft and yielding, and unfitted for the purposes they are intended to fulfil in the animal economy.

This fact may be demonstrated by a very simple experiment: if you entirely deprive common fowls of lime, by keeping them confined in a locality where they have no opportunity of getting it, their eggs will be without shells, although directly the calcareous constituent of egg-shell is restored to them, the eggs re-acquire their natural earthy covering. A similar effect may be produced in the human subject, with reference to the earthy matter of the bones: if the digestive organs be incapable of assimilating the phosphate of lime from the ingesta, the bones will become soft from being deprived of their earthy constituent; and I believe a remedy may be applied as readily in such a case as in that of the softened egg-shell.

I have on two or three occasions certainly had reason to believe that great benefit was derived from giving bone powdered and mixed with bread, and at the same time draughts containing phosphoric acid, which converts phosphate of lime into a biphosphate, a more soluble salt than the phosphate, and probably much more readily assimilated. The result of this treatment was certainly such as would warrant the just expectation of facilitating the nutrition of bone.

You will find, gentlemen, that it will require some moral courage to recommend such chemical treatment; for you must expect the jeers of the sceptical and ignorant, whose reasoning powers never carry them beyond the empirical treatment handed down by the authority of their predecessors. I have *demonstratively* proved to you, I think I may say, over and over again, the advantages of applying phosphoric acid to exfoliating bone, to produce its rapid removal upon a principle precisely similar. These considerations, gentlemen, will, I trust, lead you to perceive at once that the diseases of the osseous system are not in any way independent of the general laws which regulate the morbid conditions of every structure in the body, but that they are as completely subject to all the phenomena of nutrition and deterioration as the rest of the organismus.

Hypertrophy of bone.—Hypertrophy of bone is an enlarging, thickening, or increase of its bulk; and, regarding the subject in that light, it is not always to be considered as a diseased action.

If it were my task to prove to you, further than I have attempted to do already, that bones possess a vital endowment, I should

endeavour to do so by bringing forward the examples of an enlargement of a bone from excessive use of a limb. If, for instance, you examine the right arm of a man who is constantly employing it, and compare it with the left, you will often find it one third larger, and marked much more strongly at the points of the insertion of the muscles, indicating the proportional development of the muscular system.

Let me request your attention to these two full-grown humeri: observe the great difference between them—one comparatively small, light, and smooth, the other large, irregular, and heavy; no doubt the difference resulting from the circumstance, that one has been subjected to greater and more constant exercise than the other, and a consequent increased demand of the tissues for a supply, sufficiently demonstrates the influence of increased vitality as being proportionable to the increased functional employment.

There can be no doubt that this increase is dependent on muscular action, and therefore nature points out to you (as surgeons) a most important fact to be judiciously used in the treatment of fracture of bones, which is, that a patient is not to be kept too long inactive; and although rest and the recumbent posture are most essential in maintaining coaptation for a certain time, yet frequently it will be found that the employment of the muscles, and the effect of the weight being thrown upon the injured limb, is often the most ready and efficient mode of inducing ossific deposition. I certainly have frequently seen the union of a fractured bone much retarded by too protracted a confinement to bed, and have as often hastened the reparation by desiring a patient to get up, and throw a portion of his weight upon the disabled limb: I need scarcely tell you, gentlemen, of the necessity to protect the broken bone at the same time by well-adjusted splints. This kind of hypertrophy I say, therefore, is not to be considered as disease, but rather as a sign of health—a formative action. For you will not only find, after continued exertion, the bones increased in size, but the muscles and the arteries also; and the whole apparatus for the nutrition of the limb is in the highest state of perfection, to sustain the additional call made upon it in the performance of its required duties.

Indeed, it is a similar condition to that kind of inflammation which is sometimes spoken of under the term "formative inflammation," an example of which we constantly find in the periodical increase of the vessels during the annual growth of the stag's horn, and of the spermatic arteries of those animals that have only certain seasons for procreative desire.

This state of blood-vessels differs from the diseased condition termed inflammation, (according to the common acceptation of the term,) inasmuch as they still retain their tonicity, and are enabled to convey the additional quantity of blood, proportionable to the increased demand of the tissues for nutrition; so that the arteries, capillaries, and tissues, are all competent to the function they are by nature destined to perform.

But when there is disease (true inflammation), the parts do not agree in their mutual conditions: there is a want of reciprocal action, and it is this which produces the morbid state. Therefore mere hypertrophy I do not speak of as disease, but only as an illustration and proof of the vitality of bone.

Exostosis.

This condition may be considered as a partial hypertrophy, but I will shew you examples of the disease before I attempt to explain it to you. You will observe that the projections of bone in these specimens are placed at the points of attachment of muscles, and, no doubt, the result of their action, inducing a development of bone proportionable to the muscular power acting upon it. Examine the bones of the foetus, of infancy, adolescence, of the adult, and in old age, and you will find the strength of bone always corresponding to the development of the muscular system; so that, if from any circumstance a particular muscle happens to be more than usually employed, there is a liability to a partial deposition of bone corresponding to the precise spot of the application of the inordinate action of the muscle; but even this partial hypertrophy can scarcely be regarded as disease, although I shall have to point out to you that it sometimes renders an operation necessary.

Such an enlargement may become interfering with the motion of a joint, and thus cause great lameness. Most of you must have heard of splints in horses: they are partial hypertrophy of bone, and are of no importance if they do not interfere with the motions of the knee; but when they do, they entirely destroy the sale of the animal. The same interference may occur in the human subject, or the enlarged portion of the bone may press upon blood-vessels or nerves, and lead to most important symptoms, demanding surgical treatment.

Upon examination of the part, you will discover a swelling, and no doubt, gentlemen, you would pronounce it to be a tumor. But what do you mean by a "tumor?" I suppose you would answer me in the words of John Hunter, that "it is a circumscribed swelling produced by disease, and differing in its nature and consistence from the surrounding parts." But that definition would

not be correct in this case; for an exostosis does agree, both in nature and consistence, with the structure from which it emanates; and, therefore, all you can say of it is, that it is an "abnormal enlargement;" and you will readily discover that it is of an osseous formation, from the depth of its attachment, the hardness of its consistence, and its perfect immobility. If the swelling does not interfere with the motions of any joint, nor press upon either a nerve or blood-vessel as to interrupt the natural functions of the part, the tumor should be leeches and blistered, which treatment will sometimes succeed in producing its absorption; but if, on the contrary, it does produce great inconvenience and hindrance to the natural uses of the limb, the exostosis must be removed by a surgical operation: this may be performed either by cutting down upon it, and sawing it off at its base, or by separating it by means of a pair of strong "bone-nippers" from the bone to which it is attached.

Sir Astley Cooper recommended what he considered a simpler, safer, and equally certain mode of procedure; but I think, as far as my experience has enabled me judge, that his plan is more hazardous, and less certain to lead to the cure of the disease. He believed (as these true osseous exostoses derived their blood from the periosteum) that, if he stripped the membrane from the bony tumor, he should deprive it of its nourishment, and that it would be removed by absorption. This operation requires, however, extensive dissection and perfect exposure of the tumor, and renders it therefore more complicated at the time, and consequently more liable to produce subsequent constitutional disturbance. I prefer, therefore, the sawing or cutting off the bone at once. I have frequently performed the operation with perfect success, and have never known an instance of the return of the affection. The operation, however, of removing these tumors, either by saw or bone-nippers, requires due anatomical knowledge, and cannot be safely performed without strict attention to the liable implication of important blood-vessels and nerves.

Case.—Many years ago I remember seeing an operation of this kind performed by Mr. Levinge, who although only a pupil at the time, displayed a degree of anatomical knowledge, and a ready application of it, during the performance of the operation, which would have done credit even to a veteran in surgical practice. It is one thing, gentlemen, to know what should be done, but quite another to apply your knowledge at the instant the demand is made upon you to exercise it. To return, however, to the illustration. A gentleman consulted Mr. Levinge respecting a tumor, the size of a walnut, situated on

the head of the left fibula, and which, during the motion of the knee-joint, struck against the external condyle of the femur, so as to interfere with his progression. Mr. Levinge explained to him the nature of the swelling, and recommended its removal, which was readily consented to by the patient.

On exposing the tumor, Mr. Levinge, from his anatomical knowledge, was led to examine the relative positions of the fibula nerve and the exostosis, upon which he found that the anterior tibial branch of that nerve ran immediately through the substance of the adventitious bone. He immediately proceeded in his operation to remove a portion of the tumor with a small saw: in fact, he dissected out the nerve, and then sawed off the bony tumor. A careless or ignorant surgeon would have cut through the nerve, and probably permanently interfered with the motions of the toes and ankle-joint, or even perhaps produced great injury to the nervous system by the lesion of this branch.

Case.—On the 19th March, 1838, I saw my colleague Mr. Key remove an exostosis from the inner side of the left humerus, which was in such close contact with the brachial artery and ulnar nerve that it required the nicest manipulation to remove the tumor without injury to either of these important structures, but in which he most perfectly succeeded.

Case.—In 1842 I was consulted by Mr. Paul, of Cambridge, with an exostosis growing from the inner side of the femur, just at the point where the femoral artery passes through the large head of the triceps, and, indeed, the tumor in some degree pressed upon that vessel. On removing it, I had considerable difficulty in avoiding the artery, and, indeed, wounded a large branch which seemed to have nourished the exostosis, and which I secured with considerable trouble.

I have known persons admitted into this hospital with an affection supposed to be an aneurism of the subclavian artery, but which, upon examination, proved to be an exostosis growing on the first rib, just at the insertion of the scalenus muscle. The circumstances in which these cases simulated aneurism, were pulsation in the tumor, swelling and loss of the power of motion of the arm, and a scarcely perceptible pulse at the wrist: but a just diagnosis was formed of these cases by producing pressure on the subclavian artery at the tracheal side of the tumor, and it was found that, although the pulsation had ceased, the tumor was in no degree diminished in size: moreover, when pressure was removed, the pulsation did not return throughout the whole surface of the swelling, but was confined to the course of the artery, extending only over a

space corresponding to the size of the vessel.

One of these cases was admitted into Cornelius Ward, under the care of Mr. Key, and another under myself; neither of these were subjected to any surgical operation, but they left the hospital relieved only, by the rest to which they had been strictly enjoined. Exostoses sometimes grow from the bones of the orbit, producing what is termed *exophthalmia*, which disease may lead to the destruction of the organ of vision; but some tact is required to distinguish this condition from a protrusion of the eye produced by disease of this organ itself, termed *hydrophthalmia*; or even an enlargement of the lachrymal gland may so protrude the eye as to render the diagnosis difficult.

Dr. O'Beirne, of Dublin, has described what he considers to be a characteristic means of distinguishing between *exophthalmia* and *hydrophthalmia*, and as his published account of it has, I believe, never been contradicted, I consider myself justified in mentioning it to you. He tells us that, in *hydrophthalmia*, the eye is completely uncovered by the eyelids, while in *exophthalmia* it is more than usually covered, and especially by the upper eyelid, which is generally more or less paralytic, its surface is of a dusky red colour, and traversed by enlarged veins.

The cases that I have quoted will prove to you, gentlemen, that exostoses may become of great importance from their interference with healthy structures, and it may therefore be often found necessary to remove them, although, in themselves, as far as has yet been described, they are not productive of any bad effect on the constitution. Exostoses present in their structure the same varieties in consistence as the healthy bones; sometimes they are compact, at others cancellated, and some consist only of thin shells of osseous deposits: they occasionally disappear spontaneously, but counter-irritants, iodine, mercury, tartarized antimony, and other remedies which excite the action of the absorbents, are certainly indicated.

It is not an uncommon circumstance to find persons possessing a constitutional tendency to the formation of exostosis, and I have seen some cases in which several partial growths of bone were present in the same individual.

I attended a child with Mr. Fred. Toulmin, of Hackney, whose face was dreadfully distorted by the growth of various osseous tumors from the bones of the upper jaw. I have, indeed, seen several children of the same family affected with similar osseous growths in different parts of the

body, evincing an hereditary tendency to the disease; for such cases can only be considered in that light, and therefore they require medicinal remedies to remove the peculiar diathesis.

Atrophy of bone.—Atrophy of bone may result from disuse of bone, just as inordinate employment will tend to its increase, and this state can scarcely be considered as one of disease, but seems rather to shew that nature has a tendency to proportion the physical condition of every part to the strength required for the office it is called upon to perform.

If you have the opportunity of examining the bones of a person who has died after a very protracted illness, you will find them much diminished in size; they correspond, in fact, to the atrophied condition of the muscular system.

But as hypertrophy may be a diseased action from a plus of bony matter and inordinate secretion, so may atrophy of the osseous system arise morbidly from the want of sufficient nourishment.

When amputation of a limb is required for the removal of a diseased joint which has been the cause of confining the patient to bed for a considerable length of time, the bone offers so little resistance to the saw that its atrophied condition is at once apparent, and often leads to the suspicion of its being in a state of disease; it seems, in fact, to have undergone a partial fatty degeneration. Infants are frequently born with imperfectly formed bones, particularly of the tarsus, which are only partly developed from some deficiency in nutrition, but they are almost invariably perfected as the child's strength increases. There is also an atrophy in the bones of old men, the compact structure of which becomes thinner, the cancellated structure softer, and they are rendered incompetent to maintain their office, frequently breaking from the slightest force. You know, gentlemen, that in common language we speak of second infancy: this is not entirely a poetical expression; for in old age we do indeed sink into a kind of second infancy, not only mentally but physically and physiologically: these bones demonstrate the fact I am alluding to: examine this jaw-bone of an infant and this of old age, so similar are they to each other, and so different from this adult bone, that, but for their comparative size, you could not tell the senile from the infant jaw. All the bones in old age are deficient in earthy matter, as might be expected, when we remember that their earthy constituents are the last parts formed in the development of the body, and as one would naturally suppose that it would be the most difficult to replenish in old age.

But all the bones are not equally liable

to this state of atrophy, nor is even every part of the same bone; for instance, the spongy or round bones are not equally susceptible of the atrophy of old age. The epiphyses of the long bones are peculiarly prone to this change; hence it is that the neck of the thigh bone of old people, more frequently than any other, yields beneath the weight of the body, not because this epiphysis is worse supplied with nutrition than any other, but because it is subjected to more physical violence from the force of the muscles which act upon it, and from the great weight it has to support under a mechanical disadvantage, owing to the unfavourable angle at which the force is applied. All the epiphyses are subject to atrophy in consequence of their peculiar organization, being, in fact, extra vascular, obtaining their nutriment in a manner quite different from that by which the rest of the osseous system is supplied; but I shall dwell more fully upon the circumstances connected with fractures of the neck of the thigh-bone when I am particularly considering that branch of the present subject.

Rachitis is another form of atrophy to which the bones of children are more particularly subject, and to which all the bones seem liable, but perhaps the round and mixed bones more especially; hence, the spine is so frequently affected in this manner. This condition is termed *mollities ossium*, and it generally shews itself before the age of puberty; it frequently leads to great deformity, from the bones being unable to support the superincumbent weight. There are preparations before you which exemplify the distortions these soft bones experience. In this skeleton you observe there is scarcely a bone that has not undergone some change in its form, in consequence of its being unable to sustain the action of the muscles, and the weight and pressure to which it has been subjected. In examining the peculiar characteristics of this disease, the question presents itself as to whether it is to be considered as arising from a general want of assimilative power, a deficiency of nutrition? or only from a defect in the elimination of the earthy matter from the blood; or whether the error may not sometimes arise from a local inability on the part of the tissue to receive its due constituents, while the blood and vessels which convey it are yet normal. It is generally attributed to defective elimination of the earthy matter from the blood, but it often, I feel convinced, results from inability in the digestive organs to convert the earthy matter contained in the food into that state in which it is fitted to be carried into the blood; that it is not, in fact, properly dissolved, and is in consequence conveyed out of the system as excrementitious

matter, thus indicating (under the peculiar circumstances) the employment of hydrochloric acid as a remedy. Rickets must at any rate be attributed to a deficiency of earthy matter in the bones.

Fragilitas ossium is a disease in which the bones are so brittle that they break even from the mere action of the muscles, which are attached to them; and it is generally considered as being the result of the deposition of an undue proportion of earthy matter, but I believe this ought not to be regarded as the cause but as the effect of a deficiency in the animal constituents: so that *fragilitas*, as well as *mollities ossium*, is a state of atrophy.

The tendency to this condition of bone seems to be hereditary, for I know at this moment a family in which three of the children are the subjects of the disease: their bones break from the slightest cause. One of the girls has broken both thigh-bones three or four times: they unite very readily, but, as you may suppose, a considerable diminution in her height has been the result of these frequent lesions. Persons who have been long afflicted with malignant disease are prone to this brittle condition of their bones, which seems to prove that it is to be considered a state of atrophy, and not as an inordinate deposition of earthy matter, as some suppose.

In the practice of your profession your attention will frequently be directed to the treatment of distortions of the spine resulting from the softening of the bones, and I feel, therefore, that I am bound to give you my opinion of the mode of treatment to be adopted. I repudiate the use of all such apparatus and mechanical treatment of any kind for straightening crooked spines, which confine the patient to the recumbent posture, and prevent by exclusion from air and gentle exercise the due performance of the natural functions.

The disease is a constitutional defect in healthy nutrition, and can be remedied only by the improvement of the general health, although it is true the application of simple mechanical means may aid this object so long as it does not interfere with the natural and vital functions of life. Use common sense, therefore, and bear in mind that however the preponderance of physical disturbance to the natural functions of the spine may attract your attention, this state is only a result of a general constitutional deterioration, and that without the improvement of health no good can be effected. The remedies must (to be useful) be directed to the removal of the cause of the disease, and not to the effects. You should do all you can to strengthen the assimilative powers; and as there is every reason to believe that the nutrition of bone is most at

fault, means should be adopted, as far as diet and medicine can avail, to remedy the evil. Such diet, for instance, should be enjoined as contains most phosphate of lime: beef and mutton, and what is termed secondary bread, are therefore advisable; and phosphoric acid should at the same time be prescribed for the purpose of its union with the lime, rendering it capable of being more easily absorbed. Bottled porter will also assist in improving the constitutional powers of the patient; and care should be taken that the bowels are not relaxed so as to carry off the lime too quickly, instead of leaving it to be taken up by the absorbents of the intestinal canal. The physical treatment indicated is to support the weight of the trunk by the most simple mechanical means competent to relieve the affected bones; and such muscles should be put into gentle action as have a tendency to counteract the unnatural direction the bones may have acquired from the influence of the existing abnormal causes, viz. the undue disposition of the weight and altered muscular action.

Patients labouring under this affection should be frequently in the open air, and they should be permitted to take gentle exercise, but they must avoid most cautiously the slightest fatigue either of body or mind; riding in an open carriage, or sailing on the sea, is the very best kind of recreation which can be adopted.

Tonics of different kinds—iodine, and various alterative and sedative medicines—may be indicated; but I cannot lay down any general rule to direct your choice of any particular remedies: your own judgment, and your experience derived from a knowledge of your patient's constitution, will, and should, influence your selection.

This is all the advice I can give you as to the treatment of distorted spine; and although folios have been written on this subject, I can cull from them nothing beyond what I have just told you, unless, indeed, I entered into a detailed description of the various apparatus employed, the different gymnastic exercises recommended, the formulæ for the favourite medicines prescribed, and the recital of numerous cases illustrative of the too often imaginary efficacy of hypothetically infallible nostrums.

As the cases which are usually published are only the successful ones, they should be cautiously investigated before you are induced to follow the system recommended; and be especially careful to ascertain that your patient is under precisely similar circumstances to those described as having been relieved by the particular remedy; for although a distortion of the spine, as you will readily suppose, must always be easily recognisable, still the causes which produce it

are so various, that unless you form a just estimation of the true source of constitutional defect in each particular case, it is impossible you can scientifically treat your patient, or avoid mere empiricism.

A COURSE OF
LECTURES ON DENTAL PHYSIOLOGY AND SURGERY,

Delivered at the Middlesex Hospital School,

BY JOHN TOMES, ESQ.
Surgeon-Dentist to the Hospital.

LECTURE XV.

OPERATIONS ON THE TEETH.—*Scaling the teeth—pivoting or grafting teeth—plugging or stopping teeth.—On the extraction of teeth—general rules to be observed—on extracting incisors, canines, bicuspidæ, and molars—the extraction of stumps.*

OPERATIONS ON THE TEETH.

We have now arrived at the third division of our subject, namely, to *Operative Dentistry*. I have in previous lectures told you when operations should be had recourse to; I must now tell you how these operations are to be performed. The subject being altogether mechanical, I can only direct you how to proceed, and what, with our present knowledge, constitutes success. I cannot give you dexterity; the attainment of that will depend on your own perseverance and manual aptitude.

Scaling.

This operation consists in removing the tartar from the teeth, and is performed by the help of small steel instruments, of various forms, suitable to the parts upon which they are intended to operate. The instrument-makers will furnish you with a great variety of patterns from which to choose: those on the table are the ones I make use of. The point of the instrument should be inserted under the base of the tartar, and by pressing the instrument towards, or rather outwards from, the crown of the tooth, detach the tartar in a mass. Having broken away the bulk of the tartar, each tooth must be freed from the smaller adherent particles, by carefully scraping its surface with the edge of the scaler. The intervals between the teeth must be treated in a similar manner, till every tooth is completely free from the concretion. The teeth may then be well rubbed with a piece of cane, or a brush, or a piece of soft wood, loaded with fine pumice powder, or powdered turkey-stone, and after this again with a little precipitated chalk. By these latter processes the surfaces

of the teeth are well polished, by which their appearance is much improved, and their liability to become again encrusted diminished.

The patient should be directed to well brush the teeth, night and morning, with precipitated chalk, flavoured to the taste of the user. Should the saliva be acid, (you will learn this by the use of test-paper) then the dentrifice should contain a portion of carbonate of soda: ʒvij. of chalk and ʒj. of carbonate of soda form a good alkaline powder.

If the teeth are discoloured, patients will often ask you to restore them to their original whiteness. This cannot be done. Acids will for a time improve their appearance, by dissolving the outer surface of the enamel, and thus exposing a new surface, but they soon again become discoloured and decay. Nothing can be more mischievous to teeth than the use of acid tooth-powders, neither should any but an impalpable powder be used, otherwise the teeth will be worn into deep grooves, and are ultimately destroyed.

Areca nut charcoal has the effect of making the teeth look very white, and its use need not be objected to; charcoal made from wood should be forbidden, for it contains silex, and will wear the teeth. In choosing a dentrifice, your first care must be to ascertain whether or no the saliva is acid, and is acting upon any of the teeth. And this point must determine whether the polishing powder shall contain a soluble carbonate or no.

Several years since, a notice appeared in the *MEDICAL GAZETTE*, stating that sugar acted directly on the teeth. I put some teeth into sugar and water and in honey, but at the end of six months I could not find that they were at all affected. Latterly much has been said against camphor as destructive to the teeth, though, as far as I know, with insufficient reason.

Plugging, or stopping teeth.

A well-stopped tooth, if the operation has not been too long postponed, is perfectly restored to its former durability and usefulness. I removed last year, from an old man, a molar tooth that had been plugged for thirty years, and had been serviceable till within the last two years, when it became loose from absorption of the socket. You will often see teeth that have been stopped ten and twenty years.

Seeing, then, that so much may be gained by this operation in preserving the teeth, you cannot give too much attention to its practice; for while it is among the most useful, it is the most difficult operation the dentist has to perform. This operation is divided into two parts; the preparation of the cavity for the reception of the plug, and the insertion of the plug. In the preparation

of the cavity two points must be gained, otherwise the subsequent steps of the operation will be ineffective.

The first of these is to completely remove all the softened dentine; the second, to get a firm and regular orifice, of sufficient size as to enable the plug to be inserted, and at the same time not too large. If the cavity be large and the opening small, it will be almost impossible to make the plug solid in those parts of the cavity which are overhung; and, on the other hand, if the opening be large and the cavity small and rounded at the bottom, like a saucer, the plug will not be retained. The best form of cavity has a circular orifice with perpendicular walls; in fact, cylindrical.

The situation of the disease must regulate our manner of proceeding. If the cavity be situated in the opposed side of a molar, the tooth must be cut away with a sculper or graver till an excavating instrument can be used. If the sides of the front teeth are affected, a piece of vulcanized caoutchouc should be strained tight, and then introduced between the teeth; this, in endeavouring to regain its former figure, will separate the teeth sufficiently for the operator. When the masticating surface of a tooth is carious there is no difficulty in the operation; if the extent of the disease be slight, it may be removed by a broach of proper size. Having reduced the cavity, as nearly as attainable to the conditions I have described, the chips must be washed out and the cavity wiped dry with cotton-wool, and the plug inserted. In making the plug, our aim must be to so perfectly fill the cavity that all moisture shall be excluded, and that it shall be sufficiently hard to resist, equally with the tooth, the wear of mastication. Unless these two conditions are fulfilled, our work will be imperfect, and ultimately fail.

Gold or tin foil are the best materials for making plugs. Whichever of these be chosen, the method of use is the same.

There are three methods of introducing foil for making a plug. In one the metal is folded into narrow strips, proportioned in width and thickness to the size of the cavity. One end of the strip is, by means of a conveniently shaped stopping instrument, pressed to the bottom of the cavity. The strip is then bent, and a fold passed to the bottom of the hole, leaving the first fold projecting above the surface. Fold after fold is introduced till the cavity is tolerably full. A wedge-shaped instrument is then introduced, and the gold pressed towards the walls of the cavity; more gold is, by a similar process, pressed into the cavity so obtained. This process is repeated till the wedge cannot be forced into the plug. A flat-ended instrument is then used to compress the gold in the cavity. When we can make

no further effect on the surface of the plug by compression, the surface is filed smooth and burnished. By a careful adherence to this plan, we make a plug composed of layers of metal arranged parallel to the walls of the cavity, and therefore not liable to fall to pieces or come out. But, on the other hand, had we made the folds at a right angle to the walls, and parallel to the bottom of the cavity, layer after layer would have peeled off till little or none of the plug remained, and the decay would have proceeded to destroy the tooth.

In the second method, a piece of foil of sufficient size is rolled hard, and spherical between the thumb and finger. This is gradually forced into the cavity, care being taken to get it well in round the outer walls. When the plug has been rendered as solid as possible, the superfluous portion is cut or filed off, and the surface burnished.

The third method of using metallic foil is a combination of the two preceding ones. A piece of foil is rolled up loosely that will readily go into the cavity. When in its place a wedge-shaped instrument is passed into its centre, which has the effect of spreading the gold towards the walls of the cavity. The centre is gradually filled with folds of gold in the manner I have described. The wedge is used again and again till it can no longer be made to enter. The gold is then compressed on the surface, and the superfluous portions removed, and the surface burnished. When the plug is finished in either of the manners I have described, the circumference should be examined by a sharp steel probe. If this can be made to enter at any part, the hole so made should be enlarged by thrusting in an instrument as large as can be introduced, and the hole filled.

Either of the foregoing methods of plugging will answer, if well done. But of these I prefer introducing the metal in folds. The situation of the cavity, and also the size, will have something to do with the selection of the plan of operating. Then, again, one person will be more apt at one manner of procedure than at another. All these matters of detail must be learned in practice. I should exhaust your patience, and greatly exceed my limits, were I to attempt to describe every variety in form and situation of cavity, and every modification and plan useful in plugging.

Where the cavity of a tooth is so large that the walls are too thin to bear the pressure necessary to the insertion of a gold or tin-foil plug, the amalgam of silver or of palladium may be advantageously used. Having prepared the cavity as for the use of foil, a little mercury is triturated in a glass mortar with a small quantity of precipitated silver or palladium, till they unite and form

a paste, which is well squeezed in a piece of wash leather to force out as much as possible of the mercury. The paste is then again rubbed in the mortar, or in the palm of the hand, and then introduced into the cavity. The cavity, however, must be first well dried with lint, and care must be taken to get the amalgam in close contact with the whole circumference of the cavity.

The plug so formed hardens in the course of a few hours, after which the surface should be well burnished. The American dentists condemn this kind of plug, as it seems to me, somewhat unjustly. It is undoubtedly far inferior to either the gold or tin-foil plug, but it can be used where they cannot, and it is surely better than none. I have seen a mere shell of a tooth, that would have broken away on the first attempt at introducing foil, rendered useful for years by an amalgam plug.

Before leaving the subject let me warn you that unless the cavity be well prepared by the total removal of the softened dentine from the walls, and by getting a good, firm, and well-shaped orifice, free from acute angles, no plug will answer, and least of all the amalgam. It will fall out or become loose within twelve or eighteen months, and frequently in much less time, and decay will proceed. Teeth plugged with silver amalgam usually become stained of a deep blue-black colour. When the palladium amalgam is used there is little or no staining, if the excavating be perfect. The latter amalgam is therefore preferable.

The operation of pivoting or grafting.

When the crown of a single-fanged tooth has so far decayed that it cannot be plugged, and yet the root remains sound, a new crown may be fastened into the root by means of a piece of gold wire called a pivot: hence the name pivoting.

The operation is commenced by sawing or cutting off the crown of the faulty tooth. The pulp is then destroyed by passing up the cavity of the tooth a fine broach, and giving it a turn or two, by which the pulp is torn across near the extremity of the fang. The surface is then filed with a half-round file even with the edge of the gum. The pulp cavity is then enlarged and made cylindrical by a drill or broach similar in size to the wire we propose using for the pivot.

We must now select a tooth, whether mineral or natural, corresponding in size, shape, and colour, to the one lost, and from this the root must be removed, and the crown fitted accurately, by filing, to the surface of the fang to which it is to be attached.

A hole must now be drilled into the fitted crown, and a screw cut in it; a screw must

also be cut upon the wire, which must be screwed into the crown, and a sufficient length left projecting from the crown to occupy the hole drilled in the fang. The projecting part of the pivot is rendered a little rough, to retain a very thin coating of floss silk. In this condition it is passed into the fang, and if the adjustment has been carefully performed the new crown will fit so accurately to the fang that the artifice cannot be detected (fig. 46.)

FIG. 46.



FIG. 46.—*a*, The fang. *b*, The new crown filled and pivotted to the fang. *c*, The pivot screwed into the crown and fitted into the fang of the tooth.

The Americans sometimes use compressed wood instead of gold wire for the pivot. You will sometimes find it very convenient to adopt this plan in renewing a pivot, or when the hole in the stump is necessarily rather large.

Pivoting, though the neatest, is more frequently followed by mischievous results than any other operation performed by the dentist, and so common are these that many consider the operation as unjustifiable. Some degree of pain and tenderness is almost always felt during the first few days after the operation, and unfortunately it is not uncommon to have considerable inflammation ending in suppuration, as in the case I cited to you in Lecture XIII. But the consequence may be even worse than in that case.

The following statement was placed in my hands by a medical man who had some knowledge of the case which is related. —, Esq. aged 25 years, tall and thin, but apparently in very good health. On his marriage trip he visited Paris, and there had the misfortune to break off a front tooth. Wishing to conceal the accident from his wife, he went immediately to a dentist. The tooth was pivotted (and I have no doubt carefully, for the dentist was one with a great and just reputation), and the necessary concealment seemed insured. From the time of the operation, however, he had severe pain in the stump, which pain increased for four or five days, when he left Paris for Rouen. Upon arriving there the

pain had become excessively severe; he consulted a medical man, but it was too late. Trismus came on within twenty-four hours, and was soon followed by tetanus and death.

On the extraction of teeth.

This is not the first time I have treated on the extraction of teeth. In 1841* I described and figured, with some pleasure, what I believed to be new and much improved forms of tooth-forceps, as possessing great advantages over the key instrument, then almost universally used. Now, after the lapse of six years, I am again on the same subject, and I shall proceed with increased pleasure; for during the interval the instruments in question have come into general use. To borrow an instrument-maker's phrase, "no other tooth instruments will sell now;" whereas, previous to the date of my paper, they had no such instruments to offer for sale.

Nay, in further testimony of the value of the improved forceps, a member of my own profession, after ordering a set of my instrument-maker, found them, on trial, so serviceable, that he was induced to write a little work minutely describing them, and strongly recommending their general adoption to the exclusion of the instruments then in use;† though, for the honour and good name of our profession, I regret to say he altogether neglected to acknowledge by whom the instruments of which he had availed himself, and was describing, were designed and brought to their present state of utility, and published. Indeed, so anxious has this author been to take to himself whatever credit there may be in the improvements, that he has,—whenever he had power,—induced the makers to stamp the instruments with his name.

It is enough, however, that our means of operating have been improved, and that this improvement, whereby suffering is diminished, has been generally adopted. It matters not to the patient who invented or improved, or gave to the profession the instrument with which his tooth is removed, so long as that instrument is of the best kind, and skilfully used.

A few dentists have for many years been in the habit of purchasing their tooth-instruments in the rough, and filing them up into whatever shape they deemed best, but what this shape was, or is, was kept secret. Indeed, those who purchased finished instruments very commonly ordered the maker not to make known any of the particulars of construction. This time of professional secrecy has passed, or is fast pass-

ing away, and much to the credit of our profession.

I shall not have space to give you a history of tooth-drawing, and of the various instruments at different times in use, but must content myself with describing, as briefly as possible, the means and methods of operating we now employ.

In extracting a tooth, the following conditions should be fulfilled:—First: the whole of the offending organ should be removed.

Secondly: It should be removed with as little injury as possible to the structures in which it is implanted.

Thirdly: The patient should be spared all unnecessary pain in the operation.

That method by which a tooth, or the remains of one, can be removed most certainly, quickly, and at the same time with the least amount of injury to the adjoining parts, will also remove it with the least pain; the suffering being in most cases proportioned to the duration of the operation.

To fulfil these indications, recourse must be had to an instrument so formed that it shall grasp the tooth alone, and by the required force applied nearly in the axis of the tooth, remove it. Such instruments are forceps; but forceps so constructed that they shall accurately fit the tooth to be extracted, and so fashioned at the jaws, nibs, or blades, that they shall readily separate the gum from the neck of the tooth, to which point they shall arrive by simply placing the extremities of the jaws at the edge of the gum, closing the handles, and at the same time pressing the instrument firmly and steadily in the direction of the tooth, till it comes in contact with the free edge of the alveolar process.

As the teeth are variously shaped, so will it be necessary to have forceps of different forms; in fact, a pair fitted to each kind of tooth. By forceps so constructed most teeth may be removed in less time than by any other tooth-extracting instrument at present in use; also with less pain to the patient, and without inflicting any farther injury to the gums and alveolar processes, than must necessarily result from the forcible separation of a tooth from its natural attachments.

An instrument which in its employment requires that force should be applied to the contiguous parts as well as to the tooth to be extracted, is an imperfect instrument for the required purpose; or an instrument which, by its form and mode of application, requires that greater force should be used than would be necessary for the dislodgement of the tooth, supposing that force to be applied in the most advantageous direction, is also an imperfect instrument, and but ill fitted for the purpose for which it was

* MEDICAL GAZETTE, June 4th, 1841.

† Observations on the Extraction of Teeth, by T. Chitty Clendon, 1843.

designed. Such, however, are the imperfections of an instrument till recently in very general use for the extraction of teeth—the “key;” in the application of which the fulcrum is rested on the alveolar process, between which and the fulcrum the interposed gum is subjected to considerable pressure: just as much, indeed, as may be necessary for the dislocation of the tooth. By this treatment the gum is often considerably bruised, sometimes so much so as to lead to suppuration of the injured part, and always to an unpleasant degree of soreness. The force used in extracting a tooth with the key must be much greater than the actual force required to effect the operation, because the power is applied solely in a lateral direction,—a direction in which the tooth offers great resistance, especially in molars of the lower jaw, where the lateral alveoli are strong, and composed of dense bone.

There are several specimens on the table of two and three teeth with their alveoli torn away from the jaw, in attempting to extract a single tooth with the key. These accidents could not have occurred had forceps been used. (Fig. 47).

FIG. 47.



FIG. 47.—The lateral incisor and canine *b*, and the first bicuspid *a*, with their alveoli, from the left side of the upper jaw, torn away in one mass in attempting to extract the bicuspid *a* with the *key*.

I am quite aware that there are many and eminent surgeon-dentists who use and speak very highly of the “key” instrument; and no doubt it is very much to be preferred to the forceps which were ordinarily kept by surgical instrument makers: forceps applicable to no one tooth in particular, when applied touch only at two or three points, and are quite incapable of being passed down to the neck of the tooth, unless the gum be previously cut away, and even then very imperfectly.

Dr. Flagg, of Boston, has contrived forceps for the extraction of every kind of tooth. I have not been able to get a sight of any of his instruments, but, from the description and plates given of them in Fitch's “System of Dental Surgery,” I believe they are unlike those on the table.

A work entitled “Operations on the Teeth,” by Mr. Snell, contains a description, with plates, of a form of forceps used by the author for the extraction of the molars. The principal aim of the inventor was to have two points of metal coming out from the edge of each jaw of the instrument; the object of these points being to be passed between the fangs of the teeth. These forceps admit of but very limited use, as the fangs of the molars, especially the second and third, are likely to be agglutinated; which condition, in each particular instance, is known only after the tooth has been extracted: but besides this, it is a matter of some difficulty, in any case, to get these two points between the fangs; and thereby inflicts unnecessary pain, supposing the tooth could have been removed without this violence.

In those instruments a point was made to project from the middle of the edge of the jaws, which, on grasping the tooth, should pass under the body of the crown and between the fangs. The forceps were unfitted for, and did not come into general use on two grounds:—1st. The fangs of the second and third molars are often united, in which case the point or points would be worse than useless; and we cannot know for certain the state of the fangs till the tooth has been removed. 2d. The insertion of the points is always attended with greater pain than results from seizing a tooth with adjusted forceps; and, excepting some cases which I shall afterwards describe, is attended with no compensating advantage.

All forceps whatever should embrace the tooth they are used to extract at its neck; the neck being situated between the termination of the enamel and the free edge of the alveoli, and covered by gum. In order to arrive at this part of the tooth without difficulty, or unnecessary pain to the patient, the jaws must present an inclined plane, terminating in an edge. The external surface of the jaws of forceps, when closed, should present something like a cone, or parts of several cones, with the apex or apices cut off; and a perpendicular section should present an inclined plane, terminating in an edge, but more or less curved, as may be suitable to the particular instrument. The length from the joint to the edge of the jaws should on no account be greater than will be necessary to allow sufficient space for the reception of the crown and neck of the tooth, so that no strength may be lost.

An average tooth should be selected and given to the forceps-maker, and he should be instructed to make the jaws fit the neck of the tooth exactly, leaving sufficient room for the crown of the tooth to be free from

pressure, but not more than will be necessary to clear the enamel.

The fangs of all teeth having a general conical form, forceps, when well made and applied, should be but as a lengthening of the cone towards its base. For removing teeth which are not decayed down to the gums, the ends of the jaws should be square or slightly rounded; but when nothing but the fang remains of a tooth, rounded ends are the more convenient, as with that shape they are readily introduced between the fang and inclosing alveolus. Instruments for extracting stumps should be made altogether lighter, the jaws thin and sharp at their edges, so that they may be made to cut rather than tear the membrane connecting the fang with the adjoining tissues. (See fig. 52). But I shall say more on the extraction of stumps presently.

Forceps should be constructed and used upon the principle of lengthening the tooth for the extraction of which they are intended: thus enabling the operator to move it from side to side, or rotate it if the fang be single, and of a shape admitting of such motion.

After these lateral movements for destroying the membranous union have been effected, the tooth may, unless the fangs have some peculiar position or shape, be raised in a perpendicular direction, leaving as little injury from its removal as the operation can admit.

When forceps are used for the extraction of teeth, the operation is divided into three stages—1st. The seizure of the tooth; 2d. The destruction of its membranous connection with the socket; 3d. The removal of the tooth from the socket. When you commence operating, it will be of great service to you, and advantage to those operated on, that you should pay strict attention to these stages, and that each should be well and efficiently executed before you proceed to its successor; for, should the tooth be unskillfully seized, the crown will be broken off in the attempt to detach the tooth from the periosteum of the socket, until which is effected, the fangs cannot be removed from their bony cells. You will find that a tooth will resist a great force applied in a line with its axis, or, in other words, if you attempt to pull a tooth straight from its socket.

In seizing a tooth, the jaws should be closed lightly on the tooth, and inserted under the free edge of the gum, and then forcibly driven down to the edge of the alveoli, or even a short distance into them. I say forcibly, because all beginners, and even some practised in the use of forceps, are liable to failure because they do not use sufficient force: they seize the tooth at the

edge of the gum, instead of at the edge of the alveoli.

I wish to impress upon you the absolute necessity of laying hold of the tooth as far down towards the fangs as you can possibly get the instrument. An old and successful operator, when instructing another in the use of forceps, said—"Push them into the sockets as though you intended they should come out at the top of the head, or under the chin."

The way of effecting the second stage will depend on the shape of the tooth to be removed; as also will the third, and to this we will now address ourselves. But different shaped teeth require forceps shaped to them. It will be necessary, therefore, to describe partially the teeth, and then the forceps individually, that the peculiar shape of each instrument may be understood. Before doing so, however, I should state that it is quite impossible for any person to extract teeth properly, whatever instrument may be used, especially if the forceps be chosen, unless the operator is perfectly acquainted with the form of each tooth, with the relative position and size of the fangs, with their direction in the alveoli, with the general form of the alveoli themselves, and with the directions in which they offer the greatest and the least resistance.

Original Communications.

REMARKS UPON THE CONTINUED FEVER AT PRESENT EXISTING IN THE SOUTHERN DISTRICTS OF THE METROPOLIS.

*Read at the Physical Society of Guy's,
Oct. 13th, 1847,*

By H. M. HUGHES, M.D.,
Assistant-Physician to the Hospital.

No one, who is practically acquainted with disease, and who makes due allowance for the difference of the pathological views current at the time, can, I think, fail to admire the histories of epidemics which have been left to us by our excellent Sydenham. Each chapter convinces the reader that the author not only *saw* but *observed*, and that he *faithfully recorded* what he *observed*: each page appears to bear an almost self-evident impress of truth.

But whether there exists in nature,

as he appears to have supposed, a continued cycle of diseases, which extends over an uncertain number of years, and the diseases constituting which cycle are for the most part regular in succession as regards a single year, but which are irregular in their order of succession as regards the whole number of years; whether the disorders arising in what he calls an "epidemic constitution" possess more or less of the same general character; whether the individual diseases, though marked by symptoms sufficiently distinctive and characteristic of their nature, nevertheless present features which associate them with diseases of a different class of the same "epidemic constitution," and distinguish them from diseases of the same class but of a different "epidemic constitution," may be perhaps still open to discussion.

Whether Sydenham's notions of a general epidemic constitution of disease be founded in truth, or be derived from insufficient data and imperfect observation,—for, as he himself says, "to procure a just collection of observations about epidemics would perhaps require more than the life of any one physician,"—it is believed that none who have witnessed the character, and watched the progress of the continued fever of this country, as it has occurred in this hospital for the last fifteen or twenty years, can have any doubt that, as regards this individual complaint at least, the "epidemic constitution" has most signally varied. I refer not to the opinion which we occasionally hear propounded by some grave and respectable practitioners at our medical societies, "that diseases do not bear the use of the lancet as they formerly did," to which opinion it may possibly be replied, "*tempora mutantur et nos mutamur cum illis*;" but I refer to the general aspect of the disease itself, and to the symptoms by which it is accompanied.

Will it not be remembered, for example, by some few of those who are present, that the form of fever which was common in this hospital fifteen or eighteen years ago, varied remarkably from that which prevailed from four to ten years since, and which began, I think, gradually to decrease in frequency about three years from the present time? Will it not be recollected, that, on the former of these

occasions, remedies were employed, and with apparent benefit, which assuredly could not have been borne on the latter occasion? Will it not be brought to mind that the fever in the preceding, as compared with the succeeding epidemic, was marked by the constant occurrence of great cerebral congestion, and a continued proneness to cerebral effusion; by the infrequency of inflammation of the glands of the intestinal mucous membrane, and diarrhœa; by the non-observance at least, and, I think I may say, by the entire absence of maculæ; by the comparatively numerous instances of petechiæ and bleeding from the excretory organs; by the advantage derived from local depletion from the head, and occasionally even from general bleeding; and by the administration of antiphlogistic remedies without injury, if not with benefit?

Will it not be recollected by some who now hear me, that, upon inspection of the bodies of those who died during this epidemic, the substance of the brain was constantly found greatly congested with venous blood, and that serous effusion was continually found beneath the arachnoid membrane, and occasionally even in the ventricles? And though the small and large intestines were not then so regularly examined after fever as at the present time, and inflammation and ulceration in them was therefore not always proved to be absent, may it not be presumed that this defect arose from the conviction of such examination being unnecessary, in consequence of the absence of any of the ordinary indications of that affection during life? May it not be supposed as at least probable, that as the symptoms in the living were almost entirely referable to the head, the lesions discovered in the dead would be there also?

It was probably upon facts observed in fever of an "epidemic constitution" similar to this, that was founded the opinion, expressed by a highly respected living physician, which referred all continued fever essentially to inflammation of the brain. It was probably this fever, or one of a similar character, by which the celebrated Broussais, after a minute examination of the living and the dead, was compelled to acknowledge that the fever of Edinburgh differed essentially from that

of Paris, and to confess that in the former city no affection of the mucous membrane of the ilium could be discovered, although that affection was searched after with all the assiduity of one anxious to establish the universality of a great fact, of which he believed that he had always demonstrated the truth in his own country.

The precise period at which one of these epidemics terminated and the other commenced, I must confess that I am unable to determine; and whether, as in a later instance, the one was separated from the other by an interval of comparative freedom from all continued fever, and whether the few instances which occurred in that interval, if any such existed, were of an irregular form and mixed character, my recollection does not enable me to decide, as my attention had not then been particularly directed to the subject.

It cannot be necessary for me to dwell upon the peculiar features of the fever which was more or less rife in this hospital for a period of perhaps six or eight years, and which began gradually to decline about three or four years ago, as many, who are present, are at any rate as well, and probably much better acquainted with them than I am myself. They will, I am sure, remember that it was characterized by the constant and almost universal occurrence upon the body, and at an early stage of the disease, of "maculæ," "taches lenticulaires," or "measle-like rash;" by a considerable, but by no means grave amount of cerebral disturbance; by the frequent tendency to irritation of the bowels; the "engorgement," inflammation, or ulceration of the mucous glands of the small intestines; by the almost total absence of petechiæ and mælena; and by a hot and dry skin, and a frequent pulse during its entire progress,—that, in fact, it very nearly assimilated to what we hear of the typhoid fever of Paris.

I wish particularly to direct attention to the almost uniform appearance of maculæ upon the body; because, from their constant occurrence, not only was the fever of this epidemic considered by an estimable physician, enjoying an extended field of observation, to assimilate very nearly to an eruptive fever; but the maculæ were, I know, then regarded by some

as the almost necessary accompaniments of all continued fever. They were supposed to have existed at all times, and not to have been observed before, as an ordinary occurrence in this country, not because they were not present, but because they had not been looked for.

Upon the peculiar features which distinguish the late epidemic from that at present existing, I need not here insist, as they will be referred to hereafter. I may, however, observe that the epidemic to which I have alluded, after prevailing for several—at the least six or eight—years, gradually declined, and at length almost entirely disappeared; so that, for a period of fifteen or eighteen months, fever was extremely unfrequent in the hospital: more unfrequent, indeed, than I recollect it to have been for the last eighteen or twenty years. When a solitary case did appear during this temporary absence of any particular epidemic, it was often so different from what had previously existed, as in some instances to induce doubts of the true nature of the complaint. I refer more especially to the absence of maculæ, and the presence of a soft and often perspiring, in the place of a dry and hot, skin.

It is at least a year, and I believe it must be thirteen months (for I know not the exact date) since I saw the first example of this form of the complaint, and I well recollect the doubts which were expressed as to its nature from the circumstances to which I have referred; so completely had the presence of maculæ and a hot and dry skin become associated in our minds with the existence and the very name of fever. Instances of this kind gradually increased, until they at length accumulated during the late summer so as to constitute a distinct epidemic.

Of this epidemic, as it has hitherto appeared under my own notice, I propose to offer a brief sketch. I shall confine my remarks to cases which have been under my own care within the walls of the hospital, as it is in the progress of those only that I have been able to watch throughout. The cases are, I am aware, far too few and too uniform as to the position and circumstances of the sufferers, to effect anything more than to break up ground to be cultivated by others, and to offer a few stones for the foundation of a building

which, I trust, may be completed by other and more varied observation. I might, indeed, easily have enlarged the field of my observation, but it would not then have been so narrowly watched. I have preferred, therefore, to work upon my own ground with my own tools. I wish it, then, to be distinctly understood that the following observations are founded upon hospital cases only, which have occurred under my own care, inclusive of those of which I had the entire charge, and of which I saw the entire course, during my senior colleague's absence from town, and that every one of these cases has been put down in the table. I trust I shall be excused for several instances of repetition which, in referring to different cases, or the same case under different aspects, could not be conveniently avoided.

There existed a period, extending over fifteen or eighteen months, during which, as I have previously stated, an unusually small number of cases of fever were admitted into the hospital. The instances in this interval were single, mild, and sporadic. They exhibited no regular or defined characters. Sometimes they assimilated to the epidemic which had preceded, but frequently more nearly approached to those of the epidemic which followed. The readers of Sydenham will recollect that he notices similar anomalous combinations as occurring in his time. It was not till the latter part of the spring, or the beginning of the summer, that the cases became so numerous as to be regarded as constituting an epidemic, and not till June 23d that the first cases were admitted into the new wards, which, as concerns fever, were, I believe, intended merely as receptacles for the superabundance of the old wards.

It is from this date, therefore, that my observations commence. The disease at this time was usually exceedingly mild. The patient almost uniformly came from an infected house or court, and frequently had relatives or friends who were then suffering, or had already suffered, from the complaint. He generally stated that, without any premonitory symptoms whatever, he had been seized, perhaps while at his ordinary work, with shivering, headache, and pains in the bones, (occasionally accompanied with vomit-

ing), which caused him to desist from his labour and return home. In other and fewer cases the patients had been slightly unwell for four or six days before the occurrence of the more decided symptoms from which they dated the attack. Most commonly they had, before admission, taken no medicine, or, if any, only a "dose of salts," or some other aperient. The symptoms, on admission, were ordinarily a slightly flushed face, with a languid and somewhat anxious expression of countenance; not the dull, heavy, dreamy aspect which had been before so general; a hot, but very generally a moist, and not unfrequently a perspiring, skin; a simply frequent pulse, rarely ranging higher than 100, and a pale moist tongue, with a white fur, frequently interspersed with red papillæ. They complained of "being ill all over;" of pain in the body, head, and limbs; of thirst, and sometimes of vomiting, and, when questioned, sometimes also of relaxed bowels. Often they had no local complication whatever. They were frequently extremely filthy, covered with flea-bites, and so loaded with vermin, as not to be approached, with safety to the examiner, without purification. After being washed, and supplied with a little bland nourishment, and placed, with fresh linen, in a clean bed, they were often, on the next day, so strangely changed and surprisingly improved, as scarcely to be recognised as the same individuals. It not unfrequently happened, indeed, that, upon the second or third day of their stay in the hospital, the tongue became quite clean, the skin cool and perspiring, and that the pulse was reduced from 100 to 80, or even less, and that this improvement, independently of the means before referred to, occurred without the administration of any other medicine than a little sesqui-carbonate of soda in mint julep, occasionally assisted by a few drachms of castor oil as a laxative.

In some instances the patients never had any return of febrile symptoms, and no other medicines were prescribed: their diet was improved as their appetite increased; their strength was speedily restored, and they were quite able to leave the hospital in ten days or a fortnight. Not unfrequently, on the contrary, while the patient was apparently progressing in every respect

favourably, having been left on one day with a quiet and slow pulse, a clean tongue, and natural skin, he was found on the next day with a loaded and even dry tongue, the skin burning hot, and a more rapid pulse than had at any time existed before. This relapse was sometimes, like the original attack, free from any local complication, and passed off in the course of two or three days, without materially delaying the convalescence. The patient then, without any change of medicine, and with a simple restriction of diet, quickly regained his former condition.

The febrile excitement of these relapses, under the foregoing favourable circumstances, so quickly vanished, that they were at first suspected to depend upon a too hastily improved diet, some improper article of food, or, possibly, from a constipated state of the bowels. Independently, however, of their having occurred in cases wherein neither of these exciting causes of a relapse existed, and wherein no other cause could be discovered, it was in one instance distinctly proved not to be thus accounted for. A patient, who had no friends to bring her anything, was improving rapidly, as others had done before her, and my clerk suggested that she might be allowed some fish. Fearing, however, a relapse from one or other of the causes previously mentioned, I declined to accede to his proposal, and the diet was unchanged. The next day she had a severe relapse. Subsequent experience abundantly proved that this disposition to relapse was one of the peculiar features of the epidemic, more especially at its first appearance. In this respect, and in some others, it resembled the fever which was so prevalent in Edinburgh two or three years ago. These cases rarely required much, if any, wine, or any other stimulant; but not only bore, but were apparently benefitted, where no diarrhoea existed, by quinine.

I have hitherto referred only to those cases of the complaint in which no local complication was supposed to be present. Of the 38 cases upon which these observations are founded, 20 were thus originally uncomplicated, and of these there were six who suffered relapses. In one of these cases the relapse was accompanied with inflammatory jaundice, in one with endo-

carditis, and in one with severe vomiting.

Upon their first admission, however, there existed in a large proportion (in 15 out of 38) of the cases, more or less bowel-irritation, accompanied with the usual red-tipped, or glazed, or dry tongue; and sometimes with pain in the abdomen, tenderness in the right iliac region, and vomiting. This, indeed, was almost the only severe complication which, excepting in rare individual examples, and previously to the relapses, attended the epidemic. In one case only was the fever primarily accompanied with pneumonia; in one with pleuritis; in one with simple vomiting; and in one only did the disorder assume the character of the former epidemic, distinguished by maculae and cerebral disturbance*. The affection of the bowels was often exceedingly severe, and only checked after long perseverance in astringent and soothing remedies. It was generally, and most effectually treated by starch injections with tincture of opium, or syrup of poppies, together with serpentary and compound chalk powder with or without opium, and wine, as the particular case seemed to require. In one case only was the extract of logwood, in consequence of the necessity for some additional astringent, added to the mixture.

When the diarrhoea was checked, or rather when all indication of irritation of the bowels had ceased, the patients were treated with the infusion of serpentary and ammonia—so frequently and so advantageously administered in this hospital. They then most commonly speedily recovered, and were, or appeared to be, less liable to relapse than the persons in whom no local complication had existed.

Of the thirty-eight cases twelve had a marked relapse while apparently proceeding rapidly in their convalescence. The relapse was often more severe than

* I must not in fairness omit to state that a case is not here included which was by some, and those not inexperienced persons, considered to be a case of fever, but which was not so regarded either by Dr. Addison, whose opinion I possessed the advantage of having upon the subject, or by myself. This case, however, it is but candid to acknowledge, after being most improperly removed from the hospital, died, and was examined after death, when it was stated that no evidence of disease was discovered in the brain, wherein the lesion was expected, nor, indeed, in any organ of the body.

the original attack; but, if uncomplicated, was of short duration. It could rarely, if ever, be traced to any irregularity. The period at which it took place varied exceedingly. As far as it could be ascertained from the history of the individual cases, it took place on the following days after the primary attack, viz., in two instances on the 10th day, in two on the 12th, in two on the 14th, in two on the 18th, in one on the 15th and 16th days respectively, in one after a month, and in one on the 16th, and again on the 24th and the 28th days.

In three of these cases of relapse the renewed febrile attack was not associated with any local complication whatever. In two instances it was accompanied only with vomiting, which was speedily relieved by the application of a blister. In two of the patients it was attended with a fresh accession of bowel irritation, in one with acute inflammatory jaundice, in one with endocarditis, and in one with pleuritis, peritonitis, and probably perforation of the bowel; while in the girl who had three relapses, the first was attended with peritonitis, the second with cynanche tonsillaris, and the third with simple constipation of the bowels.

I have previously stated that one of the peculiar features of this epidemic has been that the majority of the patients have had a soft, and, many of them, a perspiring skin. But, independently of this general character, there occurred in nine of the thirty-eight cases a remarkably profuse diaphoresis, during which the patient's body was covered with sudamina. This diaphoresis was not more remarkable for its profuseness than for its beneficial operation. In every case it was critical. In every case the patient was, on the day following the perspiration, relieved from all distressing symptoms. It is remarkable, also, that this sudden improvement occurred, not in the simple cases alone, but in those also in which there were associated with the fever local inflammatory affections of great severity. The three patients, for example, who were, during the relapse of their complaint, attacked respectively with acute jaundice, endocarditis, and cynanche tonsillaris, and who appeared exceedingly ill for two or three days, were, upon the fourth, or at least the

fifth day of the relapse and of the local inflammation, found bathed in a most profuse perspiration. This was encouraged by warm clothing. The next day they were found free, with the exception of weakness, from all complaint, local as well as general, and the pulse was reduced from 100, or even more, to 75 or 80.

As to the treatment adopted for the cure of the disorder, it has been almost purely expectant. When no complications have been present, it has consisted of little more than cleanliness, pure air, and a regulation of the diet; unless the operation of a few grains of soda in mint-julep thrice daily may be supposed to have had any beneficial effect, and unless a grain or two of quinine twice or three times a day, in cases in which the debility has been great, while the perspiration has been considerable, can be regarded in the light of a febrifuge.

The complications have been met by the application of means similar to those which had been found most useful under similar circumstances in former epidemics. I may, however, observe that few have had, and fewer still have appeared to me to have required, cold lotions applied to the head: that wine has been uniformly well borne; that it has been, in some cases, administered in large doses, and that frequently it produced, very rapidly, a surprising improvement in the symptoms; and that where irritability of the bowels has not contraindicated its use, and where a perspiring skin has been present, quinine has been found not only to agree, but to have had a decidedly beneficial effect. When to this is added that in the cases (which have not been few) in which it was thought desirable to administer opium, it was never found to do any harm, but that generally it was of good service, I think I have stated all that is necessary on this department of the subject.

As to the Results of the fever, it may be remarked that the cases which first fell under my notice were of so slight a nature as to induce me to believe the epidemic was a very mild one. In this respect the present has varied from the generality of epidemics, of which it appears to be a recognised law that the worst cases occur at first, and that as cases increase in number they gradually decrease in severity. In the present

instance I am quite certain that of the cases which fell under my own notice those which occurred in an early period were considerably less grave than those which subsequently presented themselves. Of the first twenty-three cases not one was fatal, and not more than three of these appeared to be in any danger from the local inflammation which accompanied the relapses. The poor man represented by the 24th case was excessively depressed upon his admission, and died in a fit twelve hours after it. Another man (the 25th case) who was certainly too ill to have been with propriety removed from his comfortable home, died in 72 hours after his admission, notwithstanding the liberal use of stimulants. A third fatal case (the 30th in the order of admission) occurred in the person of a little girl, and resulted from peritonitis, which was supposed to have arisen from perforation of the intestines, and which took place during a relapse from a state of apparent convalescence, towards which she had gradually and slowly arrived from a condition of great peril. The only case examined after death was the second mentioned as fatal. The particular lesion discovered after death was very extensive, and very unhealthy ulceration of the mucous membrane of the ileum, cæcum, and colon.

The average stay of the patients in the hospital was certainly shorter than it has been, under ordinary circumstances, with patients affected with fever. Excluding the three fatal cases, and one that was removed the day after admission, and making no allowance for the delay occurring in consequence of the extreme poverty of some of the patients, and their utter destitution of friends and means, on account of which two or three might have been kept in the hospital longer by a week or more than they would have been under more prosperous circumstances, I find that the average stay in the hospital was twenty days and a half. I believe that the ordinary period during other epidemics has been between four and five weeks, though I must acknowledge that this belief is not founded upon anything more than common observation, and is not, as in the present instance, the result of any calculation.

Such, then, is a brief general sketch of the existing fever derived from cases

under my own care. I have, of course, seen many of those which have been under the care of my colleagues, some of which assuredly presented different features, and constituted exceptions to the ordinary character of the epidemic. I trust that we shall this evening hear whether the general features of the disorder, as I have portrayed them, are recognised as bearing a resemblance to those which they have particularly observed.

[To be continued.]

PHYSIOLOGICAL EFFECTS OF THE INHALATION OF ETHER,

By ANDREW BUCHANAN, M.D.

Professor of the Institutes of Medicine in the
University of Glasgow.

THE narcotic effects produced by ether, and described in my former paper*, do not always follow upon inhalation of ether. The operation, as it is at present practised, must be admitted to be uncertain and not devoid of danger. If too little ether be inhaled, we fail in our object of stupifying the nerves; if too much be inhaled, excessive narcotism may be induced; and if atmospheric air be not supplied freely enough, or the same air be respired more than once, there is danger of asphyxia. The source of this uncertainty and danger is the difficulty of determining the exact quantity of ethereal vapour which is inhaled, and the proportion of air which is mingled with it. To resolve these problems is, therefore, a matter of great importance, and fortunately the solution of them is not difficult. It only requires that the inhaling apparatus be of a proper size and structure, and that it be always employed at the same, and that a fit temperature. The proportion of ether and ethereal vapour is certainly known from the temperature, and if the chamber of the inhaler be of sufficient size, that proportion will vary very little during the period of inhalation. If, again, the apparatus be so constructed that there is no impediment to the free ingress and egress of the elastic fluid to and from the lungs, the quantity of air, and of course also of ether, inhaled in a given time, may be determined with considerable accuracy. Now, as the quantity of ether absorbed will, in the same

* See our last volume, p. 715.

circumstances, be always nearly in the same proportion to the quantity inhaled, we are enabled to measure, or at least adjust, the dose of ether by the sure and simple standard of the time during which the inhalation is continued. The only other criterion of the quantity of ether administered is the physiological effects resulting from it, such as the appearance of the eye and the state of the sensibility; but these, although worthy of being noted, are too vague and difficult of estimation to be relied upon alone.

It follows from what has been just said, that the form of the inhaling apparatus is of the utmost importance, and should not be regarded as a matter of mere taste and convenience, as if there were no more stable principles to regulate it. Much risk is incurred by the diversity of instruments at present in use. It is, moreover, clear that no comparable results can be expected so long as an indiscriminate use is made of instruments differing so much, that one produces full narcotism in from five to ten minutes, and another can be employed from two to four hours with impunity. Admitting fully the influence of idiosyncrasy, we cannot, without abandoning all faith in the uniformity of the laws of living nature, explain such discrepancies on that principle; and a little consideration will show that an obvious explanation of them is to be found in the mere difference of size and structure of the instruments made use of.

In constructing an inhaling apparatus, and in making use of it, every other consideration should be made to give way to the vitally important object of administering a definite quantity of ether in a given time, and having it mingled with such an unvarying proportion of atmospheric air as may be sufficient to support respiration. Now, to attain that object, the apparatus should always be employed at the same temperature; the chamber in which the vapour is contained should be of large size; the apertures into it, and the tubes connected with it, should be at every point somewhat larger than the human wind-pipe, and kept carefully free from all obstructions; and, lastly, there ought to be valves, or some similar contrivance, to direct the course of the gaseous fluid to and from the lungs.

The temperature of 60° Fahr. is the most convenient that could be selected. At that temperature, if the size of the chamber be large enough to admit of the vapour retaining its maximum tension while the inhalation is going on, the gaseous fluid consists nearly of equal volumes of air and ethereal vapour; and experience seems to have shewn that air of that degree of tenuity, or of one half its ordinary density, may be respired for a short period without any bad effects—although this cannot be considered as fully ascertained, since probably even the largest inhalers now in use are too small to fulfil the conditions above stated. If the temperature be higher than 60°, we must either lower it artificially to the proper standard, or we must admit air into the chamber so freely as to prevent the vapour from attaining its maximum tension, which it could not do without expelling so much air from the chamber as to render the remainder too highly rarified to be respired without danger of asphyxia. In cold weather, again, the apparatus must be maintained by artificial heat at 60°, for it is only by a scrupulous attention to the influence of temperature that the time of inhalation of the ether can be rendered a measure of its physiological effect.

The reason why the chamber of the instrument should be large has been already pointed out. The larger it is, the more complete will be the uniformity between the successive quantities of ether drawn into the lungs at each inspiration. It should probably not be of less capacity than from 1300 to 1400 cubic inches, the volume of air consumed by respiration in five minutes. A cubic foot is a simpler measure, and, if adopted as a minimum standard for the size of the chamber, would render all observations made with instruments so constructed comparable with each other. It is true that such an instrument will not go into the surgeon's pocket; but this is probably no disadvantage, for an agent so energetic as the vapour of ether should not be employed on light occasions, but only after deliberate consideration.

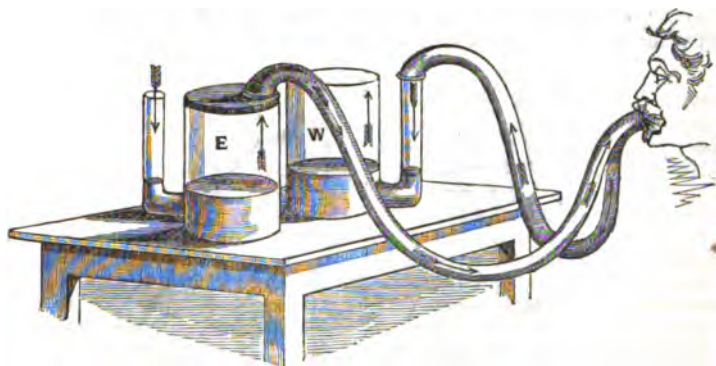
The tubes and apertures of the chamber should not be less than an inch in diameter; for when they are narrower, especially if the tubes be long, the difficulty of respiration is

much increased. Care should be taken to keep the apertures perfectly free, instead of choking them up, as is often done, with sponges soaked in ether.

The valves are a frequent source of difficulty. As they are fitted on narrow apertures, they impede the respiration to a certain extent, even when they are in good working order; but they are very liable to derangement, and may then readily occasion asphyxia.

Having frequently witnessed how imperfectly the valves perform their office, it occurred to me that an apparatus might be constructed without any valves; or, to speak more correctly, substituting for the *solid valves* now in use, *liquid valves*, which require no contraction of the tubes, and, from their simplicity of structure, are not liable to go out of order. The principle of this contrivance will be under-

FIG. 1.



stood by reference to Fig. 1. E and W are two glass vessels, the one containing a small quantity of ether, and the other of water. They are shaped somewhat like the letter U, having one limb or tube very narrow, and the other wide. They are placed with these tubes in opposite directions—the one internal and the other external, in reference to the person who is to inhale the ether. In the vessel E, the narrow tube is external and open at the top, while the wide or internal tube is shut, and has an elastic pipe attached to it. In W, again, it is the wide tube which is external and open, while the narrow or internal one is shut, and has the pipe attached to it. The two elastic pipes terminate together at the mouth-piece. The effect of this arrangement is, that when the person begins to breathe, the air inhaled into the lungs can only gain admittance through the vessel E containing the ether, and the air expelled from the lungs can only make its escape through the vessel W containing the water. A current of air is thus kept up in the direction indicated by the arrows from E to W, and the air, as it enters at E and passes through the ether, is mingled with ethereal vapour, and carries it

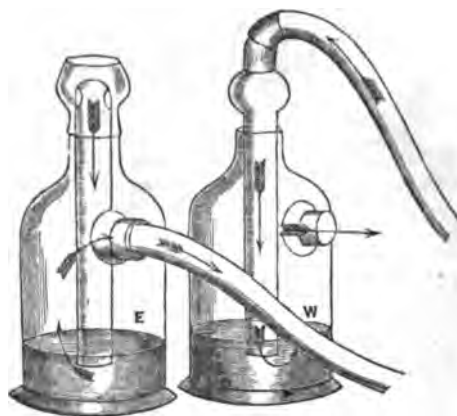
along to the lungs. The mechanism by which this is effected is of the simplest kind. The liquid in the vessels E and W stands at the same level in the tubes of each vessel, so long as the pressure of the air upon it is equal from within and from without. But no sooner does the person begin to breathe, than, by expanding his chest, he rarefies the air within, and thus diminishes the pressure upon the surface of the liquid in the internal tubes. The consequence is, that the liquid, being forced inward by the pressure of the air from without, rises in the internal and is depressed in the external tubes. But, owing to the small diameter of the external tube of E, only a very trifling elevation of the liquid in the broad internal tube can take place before the whole liquid in the external tube is exhausted, and the air rushes in to restore the equilibrium. On the other hand, no air can enter through the vessel W, owing to the reversed position of the two tubes, the broad one being external, and the narrow one internal. These mechanical conditions are just reversed during expiration; for when the chest contracts the air within is condensed, and acquires a greater tension, so that the

liquid in the two vessels E and W is now pressed more powerfully from within than from without. It therefore rises in the external tubes, and is depressed in the internal, till the whole liquid in the narrow internal tube of W being exhausted, the air rushes out in that direction, and the equilibrium is restored.

Mr. Young, of this city*, suggested to me an improvement on the apparatus just described,—that of putting the small tubes in the inside of the large ones,—and had the kindness to construct for me an apparatus of the kind.

On trying it at the Infirmary, it was found to answer perfectly so long as the patient breathed calmly; but when he coughed, the ether spirted out through the narrow tube of E. To remedy this defect, the narrow tube was made shut at the top and with two apertures at the sides, and a round capital made to fit upon it at the level of these apertures, so that any liquid poured into the capital, or projected upwards, might flow down thence into the vessel below. Mr. Young constructed for me apparatus so improved, which is shown in fig. 2. It has been

FIG. 2.



found to answer the purposes in view exceedingly well, inducing narcotism with great rapidity. It might probably, however, be still further improved by enlarging the chamber containing the ethereal vapour; for at the time it was made I was not fully aware of the importance of having the chamber of large size. I would now prefer to it an instrument constructed in the following way, as seen in fig. 3 (next page).

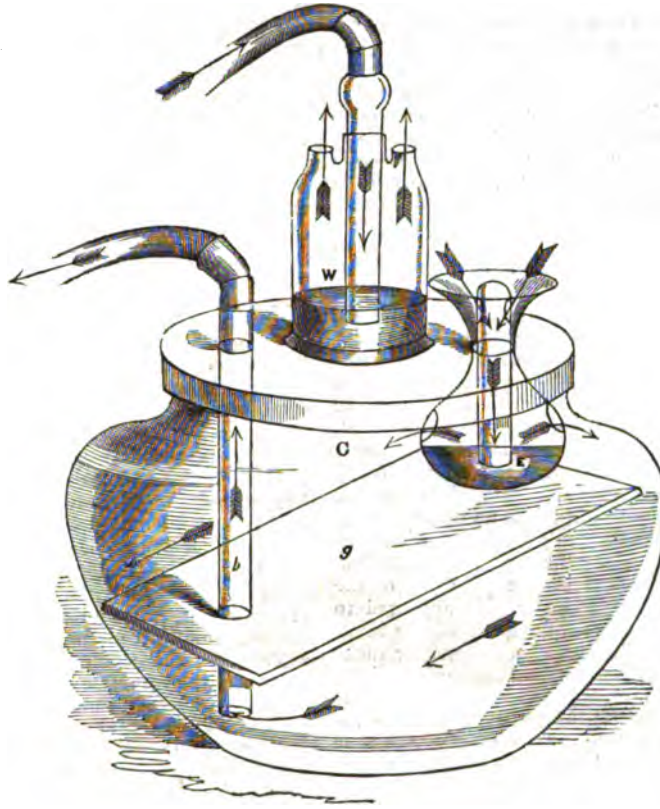
The vessel W is much the same as in fig. 2; but the vessel E has been converted into a mere valve, regulating the admission of air to the chamber C, which is a globular glass vessel of the capacity of a cubic foot, having a wide mouth, to which a wooden cover is accurately fitted, and on that the other

pieces of the apparatus rest. E consists of a glass vessel having a wide funnel-shaped mouth, a narrow neck by which it is attached to the wooden cover, and two openings below by which it communicates with the chamber C. To the neck of it there is fitted, by grinding a tube an inch in diameter, shut at the top, but having two lateral openings, through which the ether poured in at the wide mouth descends to the bottom of E, where there should be as much of it as to rise a little above the level of the lower orifice of the tube. Another tube, A, conveys the ethereal vapour and air out from the chamber. It has attached to it an expanded linen cloth, g, placed obliquely, and serving to receive any drops of ether which may descend from above: and before commencing the inhalation a slight excess of ether should be poured into E, so that it may run over and moisten the linen cloth inside. An expanded

* Now resident in Manchester, formerly assistant to Professor Graham, and well known for his ingenuity in the construction of chemical apparatus.

cloth seems to me much better adapted to promote evaporation than the sponge now in use, for a sponge is more fitted to retain liquids than to promote the exhalation of vapours.

FIG. 3.



Lime-water may be substituted for the common water in the vessel W, when the carbonic acid in the expired air renders the liquor milky. Whether the degree of decolouration produced will have any correspondence with the degree of narcotism, I have not tried, but it is worthy of attention, as Dr.

Prout's experiments on the effect of alcohol on the quantity of carbonic acid exhaled render such a result not impossible. An apparatus of this kind might be advantageously employed in many physiological experiments on respiration.

RECOVERY FROM A PUNCTURED WOUND OF THE ABDOMEN;

REMOVAL OF THE PROTRUDED OMENTUM.

By W. COATES, Esq. M.R.C.S.

THE following brief notes of a case of punctured wound of the abdominal parietes have no claim for publication

from any complication of results, or from any display of skill in original treatment, but as a record of perfect recovery in ten days from a lesion usually serious, either in progress towards recovery, or in its final result. The removal of the protruded omentum is, I fear, contrary to the high authority of Mr. Guthrie, as laid down in his lately published valuable lec-

tures.* The difficulty of its reduction, without which strangulation would probably have occurred, or, at best, a tedious suppurative process, induced me to take the course which I adopted.

Oct. 14th, 1847.—James Allen, æt. 14 years, in a dispute with a fellow-apprentice, had a sharp, broad, shoe-maker's knife thrown at him, which penetrated the skin on the left side at a point corresponding to that of the junction of the eighth rib, with its cartilage at its upper edge; then glancing downwards entering the abdomen between the ninth and tenth ribs, making a valvular canal, from the external wound to the internal aperture in the intercostal space, of about one inch and a half, having a horizontal breadth of two inches. A ragged portion of omentum about three inches in length protruded. The hæmorrhage, when I was called to him a few minutes after the accident, had not exceeded four or five ounces, and was then arrested: he was much collapsed: from this state he recovered when laid down, with no other restoratives than warm gruel. In endeavouring to reduce the protruded omentum I was baffled by the pinching of the intercostal aperture. It appeared to me that the employment of the blunt handle of a scalpel, a director, or such-like instrument, as recommended by some authors, where the muscular walls of the abdomen alone are injured, might bruise the omentum or otherwise augment the injury. Again, that no greater mischief could arise from the entire removal of a portion of omentum already, by some accident, ragged. It was therefore cut off with scissors, and when there was no further risk of bleeding, the small portion embraced by the ribs was reduced. Two broad and long strips of plaster were then applied vertically with a wet pad of saturnine solution. The shoulders and knees were raised to approximate the wound and diminish tension.

15th.—The night has been passed tranquilly, though without sleep; tongue foul; pulse 80; skin cool; bowels and bladder evacuated naturally. No abdominal tension, nor the slightest tenderness, or any symptom

of uneasiness greater than would accrue from an incised wound of the same size in any other region. His diet during the first four days was gruel and milk only; the bowels acting once daily, required no medicine. He was kept in bed, much against his inclination, for ten days, when the wound was firmly united. It only remained for him to regain the strength of which confinement and low diet had deprived him.

Wrighton, Somerset, Nov. 1847.

DISCOVERY OF A NEW ANÆSTHETIC AGENT,

MORE EFFICIENT THAN SULPHURIC ETHER.

By J. Y. SIMPSON, M.D.

Professor of Midwifery in the University of Edinburgh; Physician-Accoucheur to Her Majesty in Scotland, &c. &c.

At the first winter meeting of the Medico-Chirurgical Society of Edinburgh, held on the 10th November last, I had an opportunity of directing the attention of the members to a new agent, which I had been using for some time previously, for the purpose of producing insensibility to pain in surgical and obstetric practice.

This new anæsthetic agent is Chloroform, Chloroformyle or Perchloride of Formyle.* Its composition is expressed by the chemical formula C_2HCl_3 . It can be procured by various processes, as by making milk of lime, or an aqueous solution of caustic alkali, act upon chloral; by distilling alcohol, pyroxylic spirit, or acetone, with chloride of lime; by leading a stream of chlorine gas into a solution of caustic potass in spirit of wine, &c. The resulting Chloroform obtained by these processes is a heavy, clear, transparent liquid, with a specific gravity as high as 1.490.† It is

* In making a variety of experiments upon the inhalation of different volatile chemical liquids, I have, in addition to Perchloride of Formyle, breathed Chloride of Hydro-carbon, Acetone, Nitrate of Oxide of Ethyle, Benzoin, the vapour of Iodoform, &c. I may probably take another opportunity of describing the results. It is perhaps worthy of remark that, in performing his experiments upon inhalation, Sir Humphry Davy confined his attention to the inspiration of gases, and does not seem to have breathed the vapour of any volatile liquids.

† Of course to produce the full effects described the liquid must be of the proper specific gravity and strength.

* Lectures on some of the more important Points of Surgery.

not inflammable. It evaporates readily, and boils at 141°. It possesses an agreeable fragrant fruit-like odour, and a saccharine pleasant taste.

As an inhaled anæsthetic agent it possesses, I believe, all the advantages of sulphuric ether without its disadvantages.

1. A greatly less quantity of Chloroform than of ether is requisite to produce the anæsthetic effect; usually from a hundred to a hundred and twenty drops of chloroform only being sufficient, and with some patients much less. I have seen a strong person rendered completely anæsthetic by seven inspirations of 30 drops only of the liquid.

2. Its action is much more rapid and complete, and generally more persistent. I have almost always seen from ten to twenty inspirations suffice; sometimes fewer. Hence the time of the surgeon is saved, and that preliminary stage of excitement which pertains to all narcotizing agents, being curtailed, or, indeed, practically abolished, the patient has not the same degree of tendency to exhilaration and talking.

3. Most of those who know from previous experience the sensations produced by ether inhalation, and who have subsequently breathed the Chloroform, have strongly declared the inhalation and influence of Chloroform to be far more agreeable and pleasant than those of ether.

4. I believe, that considering the small quantity requisite, as compared with ether, the use of Chloroform will be less expensive than that of ether, more especially as there is every prospect that the means of forming it may be simplified and cheapened.

5. Its perfume is not unpleasant, but the reverse; and the odour of it does not remain for any length of time attached to the clothes of the attendant, or exhaling in a disagreeable form from the lungs of the patient, as so generally happens with sulphuric ether.

6. Being required in much less quantity, it is much more portable and transmissible than sulphuric ether.

7. No special kind of inhaler or instrument is at all necessary for its exhibition. A little of the liquid diffused upon a piece of sponge, or a pocket-handkerchief, and held over the mouth and nostrils, so as to be fully inhaled, generally suffices in

about a minute or two to produce the desired effect.

I have had an opportunity of using and seeing used Chloroform with perfect success in several surgical operations (removal of tumors, of necrosed bone, partial amputation of foot, excision of the elbow-joint, &c.) and in tooth-drawing,* opening of abscesses, for annulling the pain of dysmenorrhœa and of neuralgia, in two or three cases where I was using deep and otherwise very painful galvano-puncture for the treatment of ovarian dropsy, and in removing a very large fibrous tumor from the posterior wall of the uterus by enucleation, &c.†

Cases.—1. A child of ten weeks old had a very large nævus behind the ear. Dr. Duncan destroyed its internal organization by passing large red-hot needles in different directions through it. While the tumor was hissing and decomposing under their action, the infant lay quietly and placidly asleep on my knee, under the influence of chloroform. This is the youngest subject to whom I have given it. 2. A boy, of four or five, had a necrosed radius cut down upon and removed by Mr. Miller. He slept soundly during the operation; and, without moving, he was carried out of the operation theatre of the hospital still fast asleep. When visited some time afterwards, he was found in bed awake, with a bright merry eye, as if just out of a refreshing sleep: no pain even then. 3. A nervous woman, a patient of Pro-

* A young dentist, who has himself had two teeth extracted lately—one under the influence of ether, and the other under the influence of chloroform—writes me the following statement of the results:—"About six months ago I had an upper molar tooth extracted, whilst under the influence of ether, by Mr. Imlach. The inhalation was continued for several minutes before I presented the usual appearance of complete etherization. The tooth was then extracted; and although I did not feel the least pain, yet I was conscious of the operation being performed, and was quite aware when the crash took place. Some days ago I required another molar extracted on account of toothache, and this operation was again performed by the same gentleman. I inhaled the vapour of chloroform, half a drachm being poured upon a handkerchief for that purpose, and held to my nose and mouth. Insensibility took place in a few seconds; but I was so completely dead this time that I was not in the very slightest degree aware of anything that took place. The subsequent stupifying effects of chloroform went off more rapidly than those of the ether; and I was perfectly well and able again for my work in a few minutes."

† I have now exhibited the chloroform to above eighty individuals, and in not one has the slightest bad effect of any kind resulted.

fessor Miller's, was to undergo partial amputation of the foot in the hospital—afraid both of the operation, and of being carried in before a crowd of medical men for the purpose. I anæsthetized her with chloroform in the consulting-room of the hospital, had her carried into the operation-room in that state, and did not allow her to awake till the amputation was performed, and she was removed back again to bed. She was thus entirely spared both the moral shock and physical pain which she dreaded. 4. A boy had his elbow-joint excised by Mr. Syme. The operation, which is always a very painful one, was prolonged in consequence of the very diseased state of the parts operated on. He slept soundly, and remained perfectly and passively still during the whole operation, &c. &c.

I have employed it also in obstetric practice with entire success.

Cases.—1. The lady to whom it was first exhibited had been previously delivered in the country by craniotomy after a very long labour. Her second confinement took place a fortnight before the full time. Chloroform was begun to be inhaled when the os uteri was becoming well expanded, and the pains very severe. In twenty-five minutes the child was born. The mother did not awake till after the placenta was removed, and was perfectly unaware that her child was born and alive. She stated her sensations to be those of awaking from "a very comfortable sleep." 2. I exhibited it, with Mr. Carmichael, to a patient who had, at her preceding confinement, been in severe labour for twenty hours, followed by flooding. She began the inhalation when the dilatation of the os uteri was well advanced; the child was born in fifty minutes afterwards. She was kept under its influence for a quarter of an hour longer till the placenta was removed, and the binder, body, and bed-clothes, all adjusted. On awaking, she declared she had been sleeping refreshingly, and was quite unaware that the child was born. No flooding. An hour afterwards declared she felt perfectly unfatigued, and not as if she had borne a child at all. 3. The patient in the Maternity Hospital had twins,—the first presenting by the breech, the second by the head and hand. It was her first labour.

The chloroform was exhibited when the os uteri was nearly fully dilated. In a few pains the first child was born,—assisted by severe traction. I broke the membranes of the second, and pushed up the hand. Three pains expelled the child. The mother was then bound up, her clothes changed, and lifted into another bed. During all this time she slept soundly on, and for a full hour afterwards; the chloroform acting in this, as in other cases, as a soporific. Dr. Christison was present to see the effects of the chloroform, &c.

Perhaps I may be excused from adding, that since publishing on the subject of Ether Inhalation in Midwifery, seven or eight months ago,* and then, for the first time, directing the attention of the medical profession to its great use and importance in natural and morbid parturition, I have employed it, with few and rare exceptions, in every case of labour that I have attended with the most delightful results, and during periods varying from a few minutes to three, four, five, and six hours. And I have no doubt whatever that some years hence the practice will be general. Obstetricians may oppose it, but I believe our patients themselves will force the use of it upon the profession.† I have never had the pleasure of watching over a series of better and more rapid recoveries; nor once witnessed any disagreeable result follow to either mother or child; whilst I have now seen an immense amount of maternal pain and agony saved by its employment. And I most conscientiously believe that the proud mission of the physician is distinctly twofold—namely, to alleviate human suffering, as well preserve human life.

In some remarks which I published in the *Monthly Journal of Medical Science*, for September 1847, relative to the conditions necessary for insuring successful etherization in surgery, I took occasion to insist upon the three following leading points:—"*First*.

* See *Monthly Journal of Medical Science* for Feb., p. 59; for March, p. 718 and 721, &c.

† I am told that the London physicians, with few exceptions only, viz., my friends Dr. Protheroe Smith, Dr. Murphy, and perhaps one or two others, have never yet employed ether-inhalation in their midwifery practice. Three weeks ago, I was informed in a letter from Professor Montgomery, of Dublin, that he believed that in that city, up to that date, it had not been used in a single case of labour.

The patient ought to be left, as far as possible, in a state of absolute quietude and freedom from mental excitement, both during the induction of etherization, and during his recovery from it. All talking and all questioning should be strictly prohibited. In this way any tendency to excitement is eschewed, and the proper effect of the ether-inhalation more speedily and certainly produced. And *secondly*, with the same view, the primary stage of exhilaration should be entirely avoided, or, at least, reduced to the shortest possible limit, by impregnating the respired air as fully with the ether vapour as the patient can bear, and by allowing it to pass into the mouth and nostrils, so as rapidly and at once to induce its complete and anæsthetic effect * * * a very common, but certainly a very unpardonable error, being to exhibit an imperfect and exciting instead of a perfect and narcotizing dose of the vapour. Many of the alleged failures and misadventures are doubtless entirely attributable to the neglect of this simple rule;—not the principle of etherization, but the mode of putting it in practice being altogether to blame. But *thirdly*, whatever means or mode of etherization is adopted, the most important of the conditions required for procuring a satisfactory and successful result from its employment in surgery, consists in obstinately determining to avoid the commencement of the operation itself, and never venturing to apply the knife UNTIL the patient is under the full influence of the ether vapour, and *thoroughly and indubitably soporized by it.*"

In fulfilling all these indications, the employment of chloroform evidently offers great and decided advantages in rapidity, facility, and efficiency over the employment of ether. When used for surgical purposes, I would advise it to be given upon a handkerchief, gathered up into a cuplike form in the hand of the exhibiter, and the open end of the cup placed over the nose and mouth of the patient. For the first inspiration or two it should be held at the distance of half an inch or so from the face, and then more and more closely applied to it. To insure a full and perfect anæsthetic effect—more especially when the operation is to be severe—a teaspoonful or two of the chloroform should at once be placed

upon the hollow of the handkerchief, and immediately held to the face of the patient. Generally a snoring sleep very speedily supervenes; and when it does so, it is a perfect test of the super-induction of complete insensibility. But many patients are quite anæsthetic without this symptom.

Edinburgh, Nov. 22, 1847.

ROYAL COLLEGE OF SURGEONS.

GENTLEMEN admitted Members on Friday, Nov. 19.—J. P. Teebay—W. Pearce—G. R. Pemberton—W. Fincham—J. W. Elliott—W. J. Edwards—G. Raper—J. Urquhart—J. F. Uniacke—G. H. King—N. D. S. Wallich—T. Green.

APOTHECARIES' HALL.

NAMES of Gentlemen who passed their Examination, and received Certificates to Practise, on the 18th instant.—Robert Walmisley Baxter, Bromley, Kent—Benjamin Keatly, St. Ann, Soho, Westminster—John Beecroft, Ely, Cambridgeshire—Robert Alexander William Westley, Bombay.

CONGENITAL CONTRACTION OF THE INTESTINES.

At a meeting of the Reading Pathological Society, Mr. Harrison presented the intestines of a child, apparently healthy when born, but who soon began to decline in strength, and to vomit. He examined the anus and rectum, and found it pervious for two inches, but above that point he could pass no instrument. Vomiting of the meconium continued, with inability to retain the milk it sucked, or any other fluid on the stomach, and it gradually sank, with all the appearance of strangulated or obstructed bowels. On examining the abdomen, the intestines presented the following curious appearance:—The upper portion of the jejunum was contracted; this contraction gradually extended along the ileum and colon, until it ended in the rectum in an almost perfect *cui de sac*. Mr. Harrison regretted that he had not persevered in the use of enemata, as they might possibly have distended the rectum. He did not consider the contraction as pathological, but as physiological; as it appeared to be due to a want of secreted matter to pass downwards: and he regretted that he had not examined the liver more minutely, to ascertain if there was a proper secretion of bile.—*Provincial Med. and Surg. Journal.*

* * * A preparation displaying a state of parts nearly identical with that described in the above narrative, was shown to us some months since by a medical friend, in whose practice the case occurred. A similar condition has been described and figured by Billard.—*ED. GAZ.*

MEDICAL GAZETTE.

FRIDAY, NOV. 26, 1847.

In a postscript to one of the most recent works on Surgery,* the translator, in reference to the discovery of ether vapour and its application to surgical purposes, describes the profession and the public in both hemispheres as being in a complete ferment on the subject. It is now nearly a year since we first announced the discovery;† and without any prejudice for or against this novelty in the surgical art, we have since recorded all that we have considered to be of practical utility in reference to it. For the first six months of the present year, the medical and political journals were filled with accounts of the most marvellous results obtained by the administration of the vapour; and operating theatres were constantly visited by noblemen and idle gentlemen, anxious to be witnesses of the magical effects of ether-inhalation. The members of the profession were then scarcely in a position to form a dispassionate judgment: some opposed it as a novelty, others as a dangerous proceeding, while a third class considered it as a boon, the utility of which could not be too highly extolled. Meanwhile a furious professional war raged in America, the object of which was to determine who was the discoverer; and numerous pamphlets have been forwarded to us, in order that the name of the fortunate claimant might not be lost to posterity.

For some months past, ether-cases and ether-vapour apparatus have been

at a discount. We have not now the reports of five or six cases per week,—nor the description of some new machine, intended to eclipse all those which had been previously invented for the purpose of inhalation, or, as the translator of Chelius pithily expresses it—of making the person what is vulgarly called “dead drunk.” The cases gradually lost all novelty, and ceased to interest medical readers; while the machines, with the most complex arrangement of valves, tubes, &c., have by degrees given place to the use of an ordinary sponge. *Sic transit gloria.*

Our last number contained the announcement of the discovery, by Professor Simpson, of Edinburgh, of a substitute for ether in a peculiar compound of Chlorine and Formyle, according to the Giessen vocabulary. We this week publish at full length the Professor's communication on the subject,* which, we perceive, has already gone the round of the daily journals. From the cases reported, it would appear that this compound has been already successfully used in surgical operations by Professor Miller in Edinburgh, and by Mr. Liston at University College Hospital. The advantages which it is said to possess over ether-vapour are, that a smaller quantity of the liquid is required,—the narcotic effects are more rapidly induced, more complete, and last for a longer period,—the inhalation of the vapour is more agreeable, and attended with less irritation to the pulmonary organs. In employing it, no other apparatus is required than a pocket-handkerchief or sponge.

With respect to the chemical nature of this anæsthetic, so much confusion has been introduced into chemical nomenclature by those who profess a strong desire to simplify the sci-

* A System of Surgery, by J. M. Chelius, translated from the German by J. F. South. Part xxi. 1847.

† We believe that the first notice of the discovery, in any English medical journal, was published in the LONDON MEDICAL GAZETTE for December 18th, 1846, page 1085.

* See page 934.

ence, that it is not unlikely that ether compounds may be mistaken for it. The profession is indebted to Dr. Pereira for the removal of much of the obscurity connected with this subject; and we elsewhere* print an extract from the *Pharmaceutical Journal*, containing an historical notice of this compound, which has been for some time used in London as a local application, and sold under the name of Chloric Ether, or Tetrachloride of Carbon.†

Chloric ether is a name which has been given to two compounds different in composition,—to the oil of olefiant gas ($C_4H_4Cl_2$), or, in the German compound radical system, to the *Hydrochlorate of Chloride of Acetyle* ($C_4H_2Cl + HCl$),—and to an alcoholic solution of the perchloride of formyle of Liebig, or the chloroform of Dumas ($C_2H_2Cl_2$).

We have entered into these chemical details, as, owing to the confusion in nomenclature, one substance may be supplied for the other. Dr. Simpson's experiments have been performed with the latter (Chloroform), and the effects of the former compound have yet to be determined.‡

* Page 593.

† The following is a simple method of preparing the liquid, according to Liebig:—One part of hydrate of lime is suspended in twenty-four parts of water, and a current of chlorine gas is sent through the mixture until the greater part of the lime is dissolved, and a little milk of lime is added to make the liquid alkaline. When the solution of chloride of lime has become clear by repose, one twenty-fourth of its volume of alcohol is added; and, after being left to itself for twenty-four hours, the liquid is distilled by a gentle heat in a capacious retort. The product has an ethereal odour, and contains perchloride of formyle mixed with alcohol. On shaking it, the perchloride separates as a dense liquid, and may be obtained perfectly pure by digesting it on chloride of calcium, and distilling it again with concentrated sulphuric acid.

‡ It is proper to mention that Mr. Bell successfully employed the vapour of chloric ether as a substitute for that of sulphuric ether as early as February of the present year. (See *Pharmaceutical Journal*, February 1847, p. 357.)

Since the above remarks were written, we have ascertained that the liquid employed by Mr. Bell was the identical compound recommended by Dr. Simpson, i. e. chloroform, or perchloride of formyle, which has been extensively sold in London as chloric ether, or tetrachloride of carbon. It is prepared from

It is not our intention to offer any remarks on the physiological properties of Chloroform: they are sufficiently detailed in Dr. Simpson's paper. In midwifery practice, he has found it especially useful in allaying the pains of labour, without retarding that process, and without injury to the child. On this point he must be regarded as a competent authority. That chloroform vapour will supersede the use of ether-vapour is by no means improbable; but the extent to which this new agent can be safely and beneficially employed in surgery still remains to be proved. We have not forgotten the enthusiasm with which ether-vapour was first introduced to the profession,—an enthusiasm that completely blinded the eyes of operators to the danger attending its indiscriminate employment; and admitting that we have here an improved method of producing insensibility, we must reserve our opinion until the new agent has received a fair trial.*

THE disinfecting mania has reached Canada, in proof of which we beg to call the attention of our readers to a

chloride of lime and alcohol. Soon after ether-inhalation was introduced, Mr. Bell tried chloric ether, and found it to answer. It was employed at the Middlesex Hospital, but as it is more expensive than sulphuric ether, it has not lately been so much in request. Dr. Simpson's preparation appears to be of a more concentrated kind than that usually sold. One circumstance is worthy of the attention of those who may be inclined to make a trial of this agent, namely, that there must be a great difference in its strength and quality. While some druggists sell it at eight shillings a pound, others are selling it at from four to five shillings an ounce!

There is not, therefore, that novelty in the use of this agent, which the reports in the medical journals would have led the profession to suppose. At the same time, it is evident, from Dr. Simpson's paper, that this gentleman was not acquainted with the prior experiments of Mr. Bell. The only public notice of them which we have seen, is contained in the note of the February number of the *Pharmaceutical Journal*, to which we have already referred.

* We are informed that chloroform vapour was employed by Mr. Key in an operation performed at Guy's Hospital on Tuesday last. About half an ounce was expended. The vapour appeared to have a more stimulating effect than that of ether. Although the man appeared sensible, he did not experience any pain.

very curious document forwarded to us from Montreal.* One would imagine that all sorts of infection were locked up in human *feces*, and that disinfection merely consisted in rendering them inodorous: but we need hardly say that the results at which the learned experimentalists arrived, are as inconclusive upon this important question, as the details of the experiments are ludicrous and absurd. It would, we believe, be difficult for any sober-minded person to realise the scene of ten medical men blindfolded, provided with two basins of *feces*, in equal quantity and *strength*, assiduously engaged in smelling the same, while the contents of each basin were kept stirred for an equal period of time; and then solemnly giving a judgment on the relative intensity of the odour in the two cases! Nevertheless it appears from the communication which we publish, that all this has come to pass; and on a balance of smells, that the votes were in favour of Sir William Burnett's fluid in the number of seven to three. We are bound to say, however, notwithstanding this decided *cloacal* victory, that our countryman was not fairly treated. While M. Ledoyen, the proprietor of one of the fluids, actually assisted in ladling out each operator's share of *feces*, Colonel Calvert, the great advocate of his process, was allowed to be one of the jury; and it will be seen from the report, that his opinion underwent a very sudden and remarkable change, when he found that he had unknowingly recorded his vote against the Ledoyen "disinfectant."

This system of puffing liquids as *disinfectants*, when every person acquainted with the subject must know that they can only have a relative value in destroying a noxious gas containing sulphur, has recently received

considerable encouragement from the publication of certain Parliamentary reports. Laudatory paragraphs, written by ignorant or interested persons, frequently appear in the daily journals. This is nothing more than sanitary quackery; and for the sake of the public we shall use our best endeavours to expose it.

THERE can be no doubt that, in reference to the medical relief of the poor, the charity of the nation does not go beyond enforcing the gratuitous attendance of medical practitioners. This is like a man being charitable at his neighbour's expense: but City Councils and Parochial Boards are apt to overlook the injustice and inhumanity of such proceedings, provided they can only save a certain sum of money, perhaps to be squandered in profitless schemes. The City Council of York have declared their intention of meeting the cholera in the same "manly way" in which they repelled its attacks on a former occasion. We trust, however, that besides "manliness" there will be a proper share of *liberality* in their proceedings. On the former visitation of the cholera we find, by a paragraph elsewhere inserted,* that while the medical gentlemen of York were not paid for their services, and barely thanked, the Council assumed to themselves the credit of having repelled the attacks of the disease! If, on its reappearance, the medical practitioners of York were to leave the treatment of the poor in the hands of the City Council, they would soon be convinced of their folly in assuming credit for results to which they have not the slightest claim; and of their injustice in evading the payment of a proper remuneration to those who hesitated not to expose their own lives in order that they might benefit their fellow-cra-

* Page 952.

* Page 951.

tures. There is nothing to prevent a Cholera-fund for the relief of the poor: and it would be more satisfactory if, instead of making neat speeches on what they intend to do, the Town Council would at once set an example to their fellow-citizens, by contributing liberally in aid of those who are likely, for the want of proper medical assistance, to be the victims of the pestilence.

While upon this subject, we may point to the good effects of discussion, in opening the eyes of Boards of Guardians to the injustice with which they are in the habit of treating the medical officers of Unions. Much to their credit, the guardians of the Holborn Union have spontaneously increased the salaries of their medical officers, and we trust that their example will be extensively followed throughout the country.*

Reviews.

A History of the Discovery of the Application of Nitrous Oxide Gas, Ether, and other Vapours, to Surgical Operations. By HORACE WELLS. 12mo. pp. 25. 1847.

Some Account of the Letheon; or, Who is the Discoverer? By E. WARREN. With a "Supplement." 8vo. pp. 88. Boston, 1847.

THE whole of our readers are doubtless aware that great contention has arisen among the dentists of America, partly for the scientific honour of the first discovery of the employment of ether as a means of removing the pain of surgical operations; and in part also with a prudential anxiety to secure a pecuniary reward for the service rendered to humanity in the introduction of this potent remedy. The pamphlets now lying before us are intended to set forth the respective claims of Mr. Horace Wells, a dentist of Hartford, Connecticut, and of Dr. Morton, a gentleman practising the same profession at Boston. Whether any of our English readers will be induced to follow our example in wading through

the mass of contradictory statements and conflicting assertions of which these productions are made up, we cannot venture to opine; but, should they be capable of summoning and maintaining sufficient patience for the labour, we are certain that they will conclude with us, first, that it is only in America, where the characters of the several claimants and of their supporters are known, that the decision of the claim can finally be given; and secondly, that whenever this question comes to be so decided (as it is highly desirable for the credit of the profession in that country that it speedily should) a most heavy charge of falsehood and injustice must rest upon one or other of the contending parties. We should have been glad to have held ourselves perfectly aloof from this controversy, seeing that, as we have already intimated, no certain conclusion can be formed upon the matter by any persons who are entirely unacquainted with the respective claims to credibility of the litigants and their witnesses; but, as we are always in the habit of giving notices of medical works sent to us for review, we shall endeavour to draw out, as briefly as possible, a sketch of the grounds upon which Mr. Wells and Dr. Morton respectively lay claim to the discovery.

Mr. Wells dates his pamphlet March 30th, 1847. He states that, reasoning from analogy, he was led to believe that surgical operations might be performed without pain, by the fact that an individual, when much excited from ordinary causes, or when intoxicated with spirituous liquor, may receive severe wounds without manifesting the least suffering. Hence he was led to inquire if the same result would follow by the inhalation of some exhilarating gas, the effects of which would pass off immediately, leaving the system none the worse for its use. He accordingly procured some nitrous oxide gas, resolving to make the first experiment on himself, by having a tooth extracted, which was done without any painful sensation. He then performed the same operation for twelve or fifteen others, with the like results. This was in the fall of 1844. He proceeded to Boston, in December of the same year, in order to present his discovery to the medical faculty; first, making it known to Drs. Warren, Hay-

* See p. 951.

ward, Jackson, and Morton: the last two of whom, he states, "expressed themselves in the disbelief that surgical operations could be performed without pain,—both admitting that this *modus operandi* was entirely new to them; and these are the individuals who now claim to be the discoverers!" Dr. Wells then proceeds to state, that, by invitation of Dr. Warren*, he addressed that gentleman's medical class upon the subject, and explained his views to them; and was afterwards invited to extract a tooth in their presence. This operation was performed, but it was not entirely successful, as the gas bag was removed too soon; and, as the man said he experienced some pain, the whole was denounced as an imposition, and no one was inclined to assist Mr. Wells in further experiments. Mr. Wells states further that he instructed Dr. Morton in his profession about five years since, and subsequently assisted in establishing him in the city of Boston;—that, subsequently to discovering the use of nitrous oxide gas, he had frequent interviews with Dr. Morton, who requested to be instructed in the mode of preparing the gas, stating that he wished to make a trial of it in Boston. He told Dr. Morton to request Dr. Charles T. Jackson (with whom they were both acquainted) to prepare him some of it. Accordingly, Dr. Morton went to Dr. Jackson for the gas, who gave him the ether, as being attended with the least trouble. After two or three teeth had been extracted, it was then introduced into the Massachusetts General Hospital, where a capital operation was performed under its influence with perfect success; which fact was immediately published in the principal newspapers of the day, with the names of Jackson and Morton as the discoverers.

We shall now take up the statement of Mr. Edward Warren, who merely appears in the affair as the supporter of Dr. Morton's cause against Dr. Jackson, Mr. Wells, and all other opponents and claimants.

Dr. Warren's pamphlet appears to have been written at the end of May

1847; it commences with a very pompous account of the professional history of Dr. W. T. G. Morton, in which no allusion is made to Mr. Horace Wells as the professional instructor and establisher in practice of Dr. Morton. In the course of this detail it is stated that, having often spoken of his desire to discover some means of mitigating pain in his dental operations, the great necessity of producing this desirable result "was forced upon him by a refractory patient, who fully declared that she would have nothing done unless she could first be put into such a state as that no pain could be felt from the operation. This induced him to redouble his efforts and inquiries" (no mention is here made either of Mr. Wells or Dr. Jackson). "and led him finally to make the fortunate and brilliant discovery which has crowned his researches with such signal triumph and success!" (p. 6.)

Had Mr. Warren studiously endeavoured to involve his narrative in the greatest possible obscurity and perplexity he could scarcely have been more successful in rendering the statement he intends to convey difficult to be understood. It appears to be one of the leading tactics of such litigants as these to imitate the cuttlefish, in taking the most scrupulous precautions for fighting in the dark. We have to pass from the sixth to the fourteenth page of Mr. Warren's pamphlet to arrive at his account of the manner in which he considers that the adoption of the ether really took place. The following is his version of the matter:—

"For more than two years Dr. Morton had bestowed much thought upon this important inquiry. At the commencement of that period he was a student of Dr. Jackson's, with whom he often conversed on this and similar topics. But it was not till September 1846 that a direct trial was made with sulphuric ether. About that time (on the 30th September), "Dr. Morton called on Dr. Jackson to get some information in furtherance of his researches; and, during the conversation that ensued, in which the old topic of the inhalation of sulphuric ether and nitrous oxide gas by the students at college came up, Dr. M. inquired why he could not give the ether to his patients. Dr. Jackson said he could, and advised him to get some of Barnett highly rectified, at the same time explaining to him the nature of sulphuric ether, and its effects,

* This appears to have been Dr. John C. Warren, Professor of Anatomy and Surgery at the Massachusetts General Hospital. Three persons of the name of Warren are introduced in this discussion,—a circumstance which adds not a little to the perplexity of the case.

so far as known, on the system, assuring him that it might be safely applied, although the next morning he declined giving a certificate to this effect." Dr. Morton, on returning home, tested the effects of ether inhalation upon himself; and, being fully satisfied with the result of his experiment, immediately administered the vapour to a stout healthy man, who fortunately made his appearance at this crisis to have a tooth extracted. The ether was administered, and the tooth taken out, the man avowing a total unconsciousness of its removal. *And this is the first painless operation ever performed by similar means in surgery.*" (p. 15.)

It will be remarked that the whole of the above detail is given without the slightest reference to the allegation that Dr. Wells recommended Dr. Morton to request Dr. Jackson to prepare some nitrous oxide gas for the purpose of allaying pain in dental operations; or to the statement of Mr. Wells, published two months previously to the appearance of Mr. Warren's pamphlet, that he had employed the nitrous oxide with perfect success in twelve or fifteen similar cases towards the end of 1844. It appears that so soon as Dr. Morton made known his (?) discovery to the profession, it was vigorously assailed both by his professional brethren and by several of the American reviewers; and Mr. Warren states that, at this period, Dr. Jackson "never raised his voice in defence of the discovery: he was never considered the principal, nor, for some weeks, known in it at all." He shared in none of the attacks directed against Dr. Morton, "but contented himself with denouncing the discovery as a 'humbug,' and saying he 'did not care what was done with it if his name was not drawn in with it.'" (pp. 9, 10).

The next link in this perplexed history will be found in the following paragraph, at page 24 of Mr. Warren's pamphlet:—

"It may be asked why Dr. Jackson has been known in the discovery at all, when he really rendered no essential aid in making it, and when, after Dr. Morton had brought it out, he so carefully and particularly repudiated it, and declared distinctly that he had nothing to do with it, nor was responsible for its effects. To this very natural inquiry I reply that Dr. Morton associated Dr. Jackson with him in the affair at the earnest request and on the advice of the

friends of both parties, in order that he might avail himself of the great scientific attainments of the latter in perfecting the arrangements necessary to bring his discovery into general use. At first, Dr. Jackson claimed no part of the invention, rather disclaiming the whole; and, after it had been several weeks before the public, he only demanded the trifling sum of *five hundred dollars* for his own interest in the thing, and was subsequently contented to be named as joint discoverer in the letters-patent, as a full remuneration for his advice and trouble in what had been done."

We now find the affair taking on the character of a purely (we fear that the term is scarcely well applied) mercantile transaction. Jackson and Morton secured the discovery to themselves by letters-patent (the date of these is not furnished), and, on the 27th of October, Jackson made over the discovery to Morton, as Mr. Warren states, in consideration of receiving ten *per centum* of the net proceeds. We are given to understand by Mr. Warren that, subsequently to the conclusion of this highly professional (!) arrangement, Dr. Jackson became "uneasy, throwing out many threats of 'blowing the whole thing up,' &c. &c., thinking that he was either not likely to get his share of the credit or of the profits arising from the discovery; so" (let our readers mark the felicitous clearness of Mr. Warren's detail) "he addressed several letters to distinguished men in Europe, and particularly to some French *savans*, in one of which, to M. Elie de Beaumont, and published in *Galignani's Messenger* of about 25th of January, he says:—'I request permission to communicate to the (French) Academy, through you, a discovery which I have made, and which I regard as important to suffering humanity;' and, in the same letter, 'I have latterly turned this discovery to use, by inducing a dentist of this city to administer the vapour of ether to persons whose teeth he was going to extract;' and other similar passages." (p. 12). This conduct, on the part of Dr. Jackson, appears to have created no small resentment in the mind of his late partner, Dr. Morton; and hence appears to have arisen the controversy between these rival discoverers.

These are the leading statements contained in the pamphlets of Messrs. Wells and Warren. The details given by the former have the advantages of

clearness and brevity; those of the latter are unconscionably prolix, and sadly involved. We fully believe that to Dr. Warren may be assigned the distinction of having written the prosiest pamphlet that has appeared in the English—we beg pardon, in the American—language during the last fifty years.

If it be a matter of sufficient consequence to decide between the claims of Mr. Wells and those of the trading philosophers Morton and Jackson, the question appears to us to admit of solution only by the investigation of a committee of respectable American medical men, who may have opportunities of ascertaining on the spot how far the statements of the several parties are in reality worthy of credit. We should be glad to find that the question, as regards the priority of Mr. Wells's claim, had been clearly settled, as that gentleman appears to have pursued his inquiries without a wish to obtain any pecuniary profit by the discovery; but, since the others have chosen to render the affair one of an entirely mercantile character, we have no hesitation in applying to their contest the well-known expression used by Dr. Johnson when speaking of the wars of the Celts and Picts—"Their feuds have no more interest for us than have the quarrels of so many rats and mice."

Proceedings of Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Monday, Nov. 15th, 1847.

DR. WILLIAMS in the Chair.

MR. PARTRIDGE exhibited specimens of

Fatty degeneration of muscle,

taken from a boy, æt. 14, who died after an attack of measles, having been subject to gradually-increasing general paralysis during a period of five years. He had never been convulsed, and the mind did not appear to have been affected. On the post-mortem examination the spinal canal was found to contain about 3ss. of fluid, the cord being healthy. On opening the cranium, a large plate of bone, corresponding to the squamous plate of the right temporal bone in situation and volume, was found between the dura mater and parietal arachnoid, the latter being thickened and opaque. The portion of brain beneath the plate of bone was slightly depressed.

The deltoid and sterno-mastoid muscles had undergone fatty degeneration. The calves (which were larger than natural, and had, during the progress of the paralysis, become permanently contracted) presented a greater degree of fatty degeneration in their muscular structure than the upper extremities, the soleus and gastrocnemius being more affected also than the flexor longus pollicis; neither the nerves or tendons had undergone change.

The question of the origin of the fatty degeneration, remarked Mr. Partridge, was one of interest. Did it depend on the chronic arachnitis, or the great length of time the muscles had been kept at rest owing to the paralysis? He alluded to a case in which Mr. Fergusson had removed the scapula, and in which the muscles had been at rest for several years. It was almost impossible to recognize muscular structure in the mass of fat which had taken its place.

DR. FRACOCK exhibited

The heart of a child, presenting an open state of the ductus arteriosus.

The boy, a patient of Dr. G. A. Rees, was thought by his mother to have been born at the eighth month. He was feeble, and had much difficulty of breathing from birth, but was never observed to be livid in the face or extremities. When seen by Dr. Rees he was ten weeks old, and was in a dying state. He was small, but not materially emaciated; the sternum was prominent and the breathing laborious. A loud cardiac murmur was audible over the whole of the point of the chest, and entirely masked the natural sounds of the heart. So far from being in any degree cyanosed, the child was unusually pale: it died forty-eight hours after being first brought to Dr. Rees.

On examination, the whole of the upper lobe of the left, and the middle lobe of the right lung, were found never to have been inflated, presenting the peculiar state to which the term atelectasis pulmonum has been applied. The heart occupied its natural seat, and was of the ordinary form; it was very large for the age of the child, weighing 1 oz. 11 drachms, avoird. The walls of both ventricles, and especially of the left, were considerably hypertrophied. The auricles were natural, the foramen ovale entirely closed, and the different valves healthy. The orifice and trunk of the pulmonary artery were large. The ductus arteriosus was freely open, and formed a canal leading direct into the descending aorta, so that the chief supply of blood to that vessel was derived from the pulmonary artery. The aortic was much smaller than the pulmonic orifice. The ascending portion of the aorta was unusually large, but after

giving off the branches at the arch, the vessel diminished greatly in size, so that between the origin of the left subclavian artery and the communication with the ductus arteriosus it had scarcely half its former calibre. At the point of entrance of the duct, the aorta again dilated, and retained its acquired size throughout the thoracic portion.

Dr. PEACOCK remarked, that, though the existence of an open state of the ductus arteriosus was less remarkable in a young subject than in an older person, the case possessed interest, first, from the absence of cyanosis in any part of the body, notwithstanding that the blood distributed to the lower extremities must have been almost entirely venous; and secondly, from the circumstance that a considerable portion of the lungs had never been inflated from birth. The imperfect expansion of the lungs might probably have been the cause of the permanent patency of the duct, and of the small capacity of the aorta between the entrance of that vessel and the origin of the left subclavian artery.

Dr. CHEVREUS suggested that the contraction of the aorta distal to the left subclavian artery might have been the primary lesion determining the non-closure of the ductus arteriosus. A faulty development of the lung would result from the diversion of a large proportion of the blood intended for those organs through the widely-pervious arterial duct.

A preparation, showing an ulcerated aperture between the gall-bladder and the duodenum, by which a biliary calculus had passed into the intestine.

A female, *æt.* 27 years of age, was admitted into the Royal Free Hospital on the 31st of July, 1847. She stated that she had been ill for four days, labouring under constipation, urgent and incessant vomiting, and severe pain in the abdomen. She was much exhausted at the time of admission, the vomiting still continued, the abdomen was tense and tympanitic, and she complained of severe pain, increased on pressure, and of cramp in the extremities. While under treatment no free evacuation of the bowels was obtained, but some hard fecal matter was removed by enemata. She became extremely collapsed some hours before death, which took place on the morning of the 2d of August.

On examination, the peritoneal cavity was found to contain a little bloody serum. The small intestines were extremely distended from the stomach to within a few inches of the termination of the ileum, while the cæcum and colon were contracted and empty. At the point where the distension of the intestine ceased, there was found a large biliary calculus which entirely filled

the canal; it was not impacted, so that it could readily be made to fall back into the distended portion of the intestine, but could not, without force, be moved forwards. From the duodenum downwards to the situation of the calculus, the mucous membrane of the bowel became gradually more congested, but there was throughout no appearance of ulceration or gangrene. The external surface of the intestines displayed the quadrangular arrangement of vessels characteristic of peritoneal inflammation. The distension of the intestine was chiefly caused by the accumulation of an opaque bloody-coloured fluid, like the washings of flesh, mixed with bile and thin fecal matter. The gall-bladder was intimately adherent to the pylori-valvular portion and curvature of the duodenum, and an aperture of sufficient size to admit the forefinger existed between the fundus of the gall-bladder and the cavity of the intestine, at a point a quarter of an inch beyond the pylorus. The adhesions at the edges of this aperture were on one side torn through so as to form an opening leading directly both from the duodenum and gall-bladder into the peritoneal sac. There was a second calculus of less size than that found in the ileum, impacted in the smaller extremity of the gall-bladder. The gall-ducts were pervious; the liver small, but somewhat congested.

The calculus found in the ileum weighed 7 drachms and 6 grains, *avoirdupois*. It was nearly round by one inch and two-eighths, and one inch and one-eighth in its respective diameters. Its surface was covered by rough nodular projections, except at one extremity, where it presented a slight smooth concavity. On section, it displayed alternate layers of a deep-brown and pale-yellow colour, deposited around a brown-coloured crystalline nucleus. The whole seemed to be composed of cholesterine more or less deeply coloured by bile. The body was not emaciated or jaundiced; no history of the patient previous to her last illness was obtained.

It was inferred that, in this case, the opening between the fundus of the gall-bladder and the cavity of the duodenum had been the result of slow ulceration, unattended by any serious disturbance of the general health, and that the symptoms under which the patient sank were the result of the temporary obstruction of the bowel caused by the calculus. So far, however, as could be ascertained from the appearances detailed on examination, the calculus was gradually making its way along the canal, and might probably have been ultimately passed had not the adhesions between the gall-bladder and duodenum given way on one side of the opening, probably during the violent fits of vomiting,

and so allowed of extravasation into the peritoneal cavity.

Mr. POLAND related the case of a lady who had died with symptoms of internal strangulation of four days' duration. A large biliary calculus was found at the ileo-cæcal valve, and an ulcer of the size of a penny piece existed, forming a common opening between the duodenum and gall-bladder.

Dr. WILLIAMS exhibited a specimen of Disease and Rupture of the Mitral Valve.

A man, æt. 27, formerly a soldier, lately policeman; addicted to excess in spirituous liquors, yet never intoxicated; had enjoyed good health till the last two years, during which his strength had declined, and especially in the last three months, when his breath became short. A few weeks ago, when running up stairs, he was suddenly seized with a violent pain at the epigastrium, extending to the loins, which was relieved by leeches to the loins; but continued very weak, and in the last few days his legs swelled much.

On examination, he presented the sallow bloated appearance of dropsy from diseased kidneys: the urine was scanty, deeply tinged with blood, and highly albuminous, but with some excess of urea. The region of the kidneys was extremely tender. There were signs of enlargement of the heart, and a blowing murmur with the systole below the left breast (mitral regurgitant). Both liver and spleen were felt to be enlarged; there had been diarrhoea for several days, which still continued; the fæces of yeasty consistence.

He was at first benefited by cupping and blisters to the loins, but in a few days the urine was suppressed, and he rapidly sank.

Lungs much congested, and tough in texture. A large mass of pulmonary apoplexy at the base of the left lung. Right ventricle of the heart much enlarged, and occupying a triangular space, five inches by four, in contact with the walls of the chest. The mitral valve greatly diseased; both laminae much thickened, partially ossified and loaded with vegetations; the cords of the anterior laminae almost all ruptured, the fragments being loaded with soft vegetations, except one, which was rounded off as smooth as a ball of ivory; posterior lamina much ossified, and its cords agglutinated together. Aorta small in size, with some atheromatous patches.

Kidneys both enlarged and congested; texture coarse and easily torn. Under the microscope the cortical part presented tubules stuffed with granular matter, granular cells, and numerous blood-corpuscles, but very few fat globules. A spot of yellowish opaque tissue, accompanied by marks of contraction, exhibited tubes of di-

minished size with more numerous oil-globules. Granular matter existed also between the tubes.

The spleen was enlarged, and partially adherent to the stomach and diaphragm, and underneath the adhesions in the substance were several masses of opaque fibrinous matter, with ochreous colouring matter in them, consisting of granules, granular cells, fat globules, and a few filaments.

Rupture of all the Aortic Valves.

A woman, æt. 47, had long suffered from rheumatism, followed by dyspnoea, palpitation, &c.: was admitted with dropsy, and was found to have obstructive and regurgitant disease of the aortic valves; great enlargement of the liver and spleen; congestion of the lower part of both lungs (which afterwards passed into pneumonia), and an albuminous state of the urine.

The aortic valves were all broken down, and loaded with vegetations, which extended from one down to the anterior lamina of the mitral valve, and from another, half an inch up into the aorta; in the intervening valve, which was also broken, was a calcareous concretion of the size of a pea. There were atheromatous patches in the aorta, which was somewhat dilated.

Dr. WILLIAMS considered the rupture in these and other cases to be due to a degeneration of the deposit constituting the thickening material in diseases of the valves and arteries, the degeneration being into a fatty matter like that of the atheroma of arteries with which it is commonly combined. It often occurs in connection with the acute form of Bright's kidney; and, as in the present case, that organ presents much less appearance of fatty degeneration than the arteries and other structures of the body.

Cerebral Hemorrhage.

A man, aged 68, had enjoyed good health till seized with an apoplectic fit, followed by hemiplegia (right), under which he died in four days. The cerebral vessels were much congested, and much serum was on the surface of the brain. Grumous and clotted blood in the left lateral ventricle, and breaking up the substance of the corpus striatum; arteries at the base of the brain dilated, with opaque patches in their coats, and fibrinous clots adhering to them; heart enlarged; kidneys very small and granular.

A drawing illustrated this case.

Mr. CRISP exhibited a specimen of

Serous Cyst of the Left Ovary.

A married lady, æt. 49, who had never been pregnant, came under Mr. Crisp's care Nov. 10. She had generally enjoyed a tolerable state of health. For the last four or five days she complained of slight

tenderness over the abdomen, with occasional pain, but did not keep her bed till Mr. Crisp saw her. She had then no pain; the abdomen was, however, tender on pressure, particularly in the right pubic region; there was no tympanitis, and the thighs were not flexed; the pulse about 80, small, and a little jerky. Under treatment, all the symptoms had greatly improved when she was seen at 7 P.M. Nov. 11th. At 10 P.M., however, she was seized with sudden and violent pain in the abdomen; the pulse was feeble, extremities cold, countenance death-like, and she gradually sank in seventeen hours. The bowels were relieved twice soon after the accession of the pain, and she vomited only once—a few hours before her death.

Examination, twenty-four hours after death.—The abdomen rather distended; the peritoneal surface of the intestines was much inflamed; the convolutions in some places united by soft gelatinous lymph, this lymph in many parts covering the surface of the intestine, and of recent formation. The peritoneal cavity contained about three-quarters of a pint of dark chocolate-coloured fluid. Connected with the left ovary was a tumor about the size of a man's fist, composed of serous cysts, varying in size from a hen's egg to a nut. Attached to the posterior part of this tumor was a larger cyst (it could have contained about a pint of fluid) half full of the chocolate-coloured fluid before seen in the abdominal cavity. A recent opening existed at its upper part (where the parietes were very thin) about the size of a sixpence, the fluid having passed into the peritoneal cavity; the cyst was inflamed throughout; the uterus of its natural size, and healthy.

Mr. NATHANIEL WARD exhibited a specimen of

True Hydatid of the Heart.

The patient, æt. 22, a barman, who had been in the habit of drinking to an inordinate extent for several years, was admitted into the London Hospital, under Mr. Luke, on the 1st of November, having three days previously received a severe blow on the abdomen, resulting in peritonitis, which rapidly subsided under the usual treatment. Mr. Luke finding, on examination, that the heart was excessively turbulent and irregular in action, the man came under the care of Dr. Cobb, and died in four days from a very acute attack of double pleurisy.

The pericardium contained two ounces of fluid; the heart was larger than natural, with mitral and aortic disease; and on the posterior and upper part of left ventricle, beneath the superficial muscular fibres, was an hydatid cyst, of the size of a French walnut, containing numerous other cysts

varying from the size of a nut to a mustard-seed. The echinococcus was observed studding the inner aspect of the cysts. Neither the liver (which was in a state of cirrhosis), kidneys, or spleen, presented a similar affection. The brain was not examined.

The preparation is in the London Hospital Museum.

Dr. QUAIN exhibited a specimen of
Partial Contraction of the Abdominal Aorta.

The patient, a man between fifty and sixty years of age, (who had been accustomed to active occupation, was of regular habits, and was not conscious of having received any injury) about twelve months before his death had an attack of illness, presenting chiefly symptoms of dyspepsia. He had pain at the epigastrium. These symptoms passed away, except the pain, which was very severe, but much aggravated by any exertion. About a fortnight before his death, he consulted Mr. Ridsdale, of Easton Square. On this occasion he complained of this distressing pain, which came on on any exertion; it extended up the spine, and towards the heart. There was increased and extended action of this organ. The pain was situated midway between the ensiform cartilage and umbilicus. There was no tenderness on pressure: no enlargement could be felt. There was increased pulsation in the course of the aorta. Various remedies were tried without success, and the patient died suddenly during a paroxysm after some exertion.

After death.—The head was not examined. The lungs were healthy. The heart was enlarged, all its cavities, particularly of the left side, being dilated. Its substance was soft, though apparently not fatty. The valves were healthy. In the abdomen, the liver and kidneys were both larger than natural. The stomach presented no morbid appearance. On removing the abdominal aorta, it was seen to be diminished in its calibre for the space of half an inch. The contraction commenced just beyond the origin of the renal arteries. The canal would not admit the point of the middle finger, and possessed scarcely five-eighths of the diameter of the succeeding portion of the vessels, which had the appearance of being dilated. There was some atheromatous deposit in the walls of the vessel. This was evident at the origin of the contraction, but there was no thickening of the contracted portion.

Dr. FULLER exhibited a specimen of
Disease of Aortic Valves.

The patient, æt. 39, stated that for the last nine months he had observed from time to time a disagreeable sensation of fluttering

about the middle of the sternum, unaccompanied by palpitation, but attended by a sense of oppression at the chest. These uneasy sensations were not constant, appearing only after active exertion. Four months before admission into St. George's Hospital, under Dr. Bence Jones, he had severe cough, considerable dyspnoea, and pain on inspiration. The pain and dyspnoea subsided in a few days under treatment, but the cough continued, though not to such a degree as to prevent his working as usual until about three weeks or a month before admission, when gradually increasing oppression at the chest obliged him again to have recourse to rest. In the course of a short time the dyspnoea became more urgent, the cough more incessant, and palpitation, with pain in the precordial region and anasarca, supervened. Great dyspnoea and orthopnoea, with cough and thick tenacious expectoration, and constant and excessive palpitation, were the prominent symptoms. His abdomen was tympanitic, and his legs anasarcaous. His complexion of a dusky yellowish hue; his tongue was covered with a yellow fur; his bowels were acting regularly; the urine was exceedingly scanty, high coloured, and loaded with the lithates; the pulse about 100, extremely jerking, small and irregular, but seldom intermittent. There was extended dulness in the precordial region, and the heart's action was increased, and conveyed a tremulous motion to the hand. Both sounds were prolonged and confused, appearing to run the one into the other. At the apex of the heart the first sound was prolonged, and accompanied by a loud but not very distinct murmur; and the second sound, though not attended by any actual murmur, was by no means as clear as natural. Over the aortic valves both sounds were accompanied by a loud murmur, that with the second sound, however, being the more intense, and increasing in intensity towards the base of the heart, replacing the second sound. A loud murmur accompanying the heart's action could be heard distinctly at the posterior part of the left side of the chest. The respiration was accompanied by a constant sonorous rhonchus, and here and there by coarse crepitations. The intensity of the symptoms gradually increased, and he died on the 28th.

Both pleurae contained a small quantity of blood-stained fluid. The apex of the left lung was somewhat puckered on its surface, and contained a small mass of crude tubercle, the remainder being much congested and loaded with serum, particularly at the posterior and inferior part. The right lung was rather more congested than the left, and in the anterior part of the lower lobe was a large patch of extravasated blood.

The pericardium contained a small quan-

tity of turbid blood-stained fluid. The heart was considerably enlarged, and the cavities distended by loose black coagula. The left ventricle was much dilated, and somewhat, but not greatly, hypertrophied. The aortic valves were considerably thickened, and presented a small and rather recent deposit of lymph on their inferior surface. They were three in number, but of very different sizes, two being exceedingly large, while the third was little larger than the surface of a good-sized split pea. The two larger valves were in some measure imperfect towards their extremities, being attached to the aorta by means of small tendinous cords. The small valve was exceedingly shallow; by one extremity it was attached to the adjoining valve, by the other to the inferior surface of the large anterior valve; while from its corpus Arantii a little tendinous cord passed upwards and outwards to be attached to the extremity of the anterior valve. There were a few recent fleshy vegetations on the free margin of the mitral valve. The valves on the right side of the heart were healthy. The surface of the aorta was irregular in consequence of numerous atheromatous deposits, and in several parts was roughened and ulcerated.

Dr. FULLER remarked that the imperfection of the aortic valves was such as to leave little doubt of its being congenital. That from its nature it must have presented from the first, considerable obstruction to a free circulation, and must have admitted in like manner of considerable regurgitation. That in spite of this imperfection in the valvular apparatus, the man, who had led an active and, to a certain extent, an irregular life, enjoyed excellent health up to the age of 39.

Dr. WILLIAMS regarded the state of the aortic valves as the result of endocarditis.

Mr. HAWKINS exhibited a specimen of a *Peculiar form of Subcutaneous Sebaceous Tumor*.

A girl, 15 years of age, was admitted into St. George's Hospital with a tumor in the centre of the back between the scapulae. It had begun thirteen months before, and was supposed to have been a boil. After giving her much pain it burst, but soon began to increase again, and more rapidly after she received a blow six months ago. Four months since a surgeon punctured it with a lancet, but little more than blood escaped.

The tumor, on her admission, was nearly four inches long, and above two inches wide, and from an inch to an inch and a half in thickness, some parts of the surface projecting more than others; it was very hard, but quite moveable, and the more prominent parts were of a dark livid colour; along the surface was a thin elongated cicatrix, nearly $2\frac{1}{2}$ inches long, and $\frac{1}{2}$ of an inch wide, re-

salting from the lancet puncture; and some leech-bite cicatrices were rather hard and elevated*.

It was removed with very little hæmorrhage, and on a section being made, was found to contain much unorganised substance of a whitish-brown colour, and of the consistence of soft chalk, with slight grittiness, small portions of which could be turned out of the cellular tissue of the tumor, but the section shewed that meshes of red cellular texture everywhere pervaded its structure; around and mixed with this appearance was some firm cellular tissue and cutis, with serum and lymph such as the integuments are converted into, in elephantiasis or other forms of long-continued chronic inflammation, and immediately below the skin was a white line, lost at each end of the tumor, and which might be supposed to be a cyst spread out after being opened or ulcerated on its under surface.

The appearance to the eye of the sebaceous origin of the chalky-looking substance was confirmed by microscopical examination, by which it was seen to consist almost entirely of epithelial cells of different shapes and sizes, and in various stages of condensation, as exhibited in a drawing by Dr. Bence Jones, which shewed also the manner in which the separate masses were formed by an aggregation of the cells and scales. Chemically examined by Dr. Jones, there was found to be scarcely a trace of fatty matter, and the saline matter consisted almost solely of phosphate of lime.

It appeared probable, therefore, that the tumor originated in a common sebaceous cyst, which had healed externally after having ulcerated spontaneously, and having been punctured by the lancet; but the cyst not having closed below the skin, the sebaceous epithelial cells continuing to be formed, had forced their way in all directions in the cellular membrane, in which some inflammation had been established, the cyst itself appearing to be expanded over the surface below the skin. If an external opening had existed, a horn of the usual character would have formed; but in the loose cellular tissue a peculiar infiltrated form of the disease had been produced, constituting an undescribed variety of sebaceous tumor, the removal of which required an unusual loss of skin and subcutaneous texture.

Dr. LLOYD exhibited a specimen of *Malignant Disease of the Cæcum*, which, during the life of the patient, had formed a tumor above the right ileum, extended upwards towards the right hypo-

* The appearance of the tumor left no doubt in the minds of those who examined it that it was carcinomatous, not yet having affected the general health.

chondrium, and supposed to be connected with the liver. The ilio-cæcal valve was healthy, and although the gut was involved in the mass of disease, the mucous membrane having ulcerated away, no intestinal obstruction had resulted, the patient dying from symptoms of intestinal ulceration.

The Intestines from Ileum to the Rectum studded with a series of minute ulcerations, covered on their surface with a sloughy deposit,

taken from a man, æt. 22, who had fallen into the river, and was admitted ten days back into Guy's Hospital in a state of collapse with occasional severe rigors. He lingered nine days, and died comatose. Lungs were both congested, with lobular inflammation; spleen enlarged, soft, and black; liver soft.

Prior to the accident the patient had slept in the same room with two boys affected with fever. Dr. Lloyd thought the case was interesting, and requested the opinion of the Society as to whether the diseased state of the intestines was the result of fever or dysentery.

The meeting adjourned to Monday, Dec. 6th, 8 P.M.

Correspondence.

SOUTH LONDON MEDICAL SOCIETY.—LETTER FROM PROFESSOR MURPHY.

SIR,—Having just seen in the last number of the Medical Gazette (Nov. 19) an interesting discussion at the South London Medical Society on a case of "difficult parturition," I was naturally attracted by the observations of "Dr. Murphy." I felt, however, that I could not coincide in the doctrines expressed, which are in some degree opposed to principles of practice that I have advocated. As it is just possible that your numerous readers might attribute to me the remarks of Dr. Murphy, and some, perhaps, think them very inconsistent with my previously stated opinions, I feel it my duty to apprise you that I have not had the honour to address any meeting of the South London Medical Society.—I am, sir,

Your obedient servant

EDWARD V. MURPHY,
Prof. of Midwifery Univ. Coll. Lond.
12, Henrietta Street, Cavendish Square,
Nov. 23, 1847.

SUGGESTIONS RESPECTING THE MEDICAL RELIEF OF THE POOR.

SIR,—The present poor-law has been in operation long enough to enable the public to estimate the benefits which it has conferred upon society, also to discover wherein

It is faulty and defective, and to see the evils arising from the working of these faulty and defective parts of it.

All persons who are acquainted with the working of the poor-law must, I think, see that there is something wrong in the medical department; something so wrong that the poor man in sickness can rarely command the medical aid which he so urgently requires. The medical man has heavy duties and responsibilities unfairly imposed upon him, and for these he is inadequately paid; while the rate-payer suffers, inasmuch as many families annually become paupers from medical relief being too tardily afforded to the labouring man attacked with grave or sudden illness. I do not suppose that the average number of permanent paupers in a Union varies much: for attendance upon these the surgeon might be paid a certain fixed salary; but the greater number and the most severe of his cases are casual paupers, pauperized by illness. A fixed salary for attendance upon these is manifestly absurd and unfair: one year his district may be comparatively healthy, in the next, perhaps, an unusual amount of sickness may prevail. Typhus fever, or the cholera, may fearfully increase his sick list, and endanger his own life by exposing him to infectious exhalations there where they are most rife—in the habitations of the poor: in the one case the salary will be too small, in the other it may be (a remote possibility) too large; in either case it is unjust. A medical man, like other men, ought to be paid according to the work he has to do. For all cases of sickness occurring in persons who are not permanent paupers, but who are attended as paupers by the parish surgeon, he ought to be paid a certain sum per case; and as the time of a medical man is especially valuable to him, a fixed scale of mileage should be allowed him, so that the payment per case might in some measure depend upon the distance he had to travel to attend to it.

I fear that the payment per case is subject to this great disadvantage: to save immediate expense, many guardians would refuse medical orders to applicants not strictly entitled to them by law, although absolutely unable to pay a doctor's bill in addition to their ordinary expenses. In this case the poor man's honesty is very likely to endanger his life, for the more honest he is the less does he like to incur a debt which he feels he is unable to pay; he hopes he shall be better in a day or two, but his disease progresses, and when at last a medical man is summoned, time, of all importance in the treatment of disease, has been lost, and a very valuable life is perhaps sacrificed, or only saved after great and protracted suffering. In our agricultural

districts such a case as the following frequently occurs:—A labourer has constant and regular work at—say—twelve shillings a week; he has a wife and three or four young children; his wife or children are taken ill, and have a long or serious illness; he applies for the parish surgeon, but his application is refused, as the having constant work bars his claim to parochial relief of any kind; he is obliged to call in the surgeon, promising to pay him; this, of course, the surgeon knows he never can do. Few, however, I trust but very few, have refused to attend the poor man's family under these circumstances, and consequently, in the course of time, these cases have become a very heavy annual tax upon the time and pockets of the country practitioners; and, besides being an unjust tax, they subject them to almost daily annoyance and painful responsibility. Why should the medical man be thus burdened more than other men? Surely not because his path through life is too easy or too pleasant. The condition of the poor man, and the position of the medical man, would, I think, be much improved by the following plan.

The surgeon of a Union to be paid a fixed salary for his attendance upon the permanent paupers.

The surgeon to be paid so much per case for attendance upon all casual paupers.

A poor man having a number of children under a certain age, and whose earnings, with those of his family, do not exceed a certain sum per week, to be entitled to medical relief for his wife and children; of course, when he himself is ill, he becomes a pauper, as his income ceases with his inability to work.

I think the medical officers of Unions ought to be protected from the unjust and injurious treatment which they may be exposed to from Guardians: many Boards are actuated with the best feelings towards their medical officers, but, on the other hand, many cases have occurred where medical men have been unjustly treated by guardians. A man who does his duty, certainly, ought not to be exposed to insult without the power of redress—if he defend himself with spirit probably he loses his office; the possibility even of such an occurrence should be prevented. The fees for operations, fractures, and difficult cases of midwifery, ought to be allowed as under the present system; all dispute as to the proper amount of the fee in cases coming under these heads is thus prevented. These cases all require much attention, and involve great responsibility, and therefore deserve special fees; those at present fixed are, I think, unsatisfactory. It is a point worthy of consideration, whether a power might not be given to some body (a medical board, for

instance) to award fees in certain cases which every now and then occur, and which are not included in the present list of special cases. I will give an instance of this kind which did occur in my neighbourhood. A man's hand was very badly torn with a hook; it was quite a question whether amputation was or was not required: at the time of the accident it certainly could not have been thought bad surgery to take off the hand; this, however, was not done. After very long, and necessarily very attentive, treatment the patient recovered, and has at this day a hand scarcely, if at all, crippled. This case was laid before the local Board of Guardians, and before the Poor Law Commissioners, but I suppose the preserving a man's hand was not thought to deserve any extra payment: at any rate, no fee was allowed.

A Board understanding the merits of such a case, would, I think, have awarded a special payment to the surgeon, and not undeservedly. The foregoing remarks are made by one who has had considerable experience as a Union surgeon in an agricultural district: if they appear to you to be worthy of consideration, now that the subject of medical relief to the poor is being fully discussed, perhaps you will give them a place in the pages of your journal.—I remain, sir,

Your obedient servant,

A UNION SURGEON.

Norfolk, Nov. 12th, 1847.

Medical Intelligence.

THE CHOLERA IN RUSSIA.

LETTERS received from Russia on the 22nd instant state that the epidemic is still prevalent in Moscow, without, however, having yet developed any particularly malignant features. From the 17th of October the number of cases gradually declined. After the lapse of five days it rose once more. Up to the 25th of October (from the 30th of September), the number of cases amounted to 556, and the deaths to 167. The intelligence of the last week from the other parts of the empire visited by the pestilence is equally favourable. The epidemic, throughout, presents few malignant features.

The Silesia Gazette of the 16th ult. announces that the cholera had manifested itself at Dunaburg, within 40 miles of the Prussian frontier. The disease, however, was of a mild character.

PENSION TO THE WIDOW OF THE LATE MR. JAMES MARSH.

AFTER repeated applications the Board of Ordnance have awarded a pension of twenty pounds per annum to the widow of the late

Mr. Marsh, the well-known inventor of the test for arsenic which bears his name.

INCREASED SALARIES OF POOR-LAW MEDICAL OFFICERS.

AT the weekly meeting of the Board of Guardians held at the board-room in Gray's-in-lane on Wednesday, the 17th inst., it was resolved, on the motion of Mr. S. Pearson, an intelligent and active guardian of the upper liberty, that the salaries of the several medical officers of the union should be increased, viz., that of Mr. Gibson, from £125 a year to £165; and those of the two other medical gentlemen, Mr. White; and Mr. Whitfield, from £115 to £150 each, to commence from last Michaelmas-day; and that such sums should be exclusive of midwifery cases, which were included in the former salaries, but which it was declared should be paid for in future, separately and distinctly from the annual salaries so fixed by the board. It is a subject of congratulation that the board of guardians should have come to this resolution, inasmuch as the pay to the medical officers has long been inadequate, especially considering the great increase of both out and in door patients, and it now remains for other boards of guardians to imitate the example of liberality thus set by that of the Holborn Union.—*Times*.

PAYMENT OF MEDICAL MEN FOR PUBLIC SERVICES DURING THE CHOLERA.

WE observe that this subject is attracting the general attention of the press, because, as is well argued, it is neither reasonable nor just to expect that the population of a city during the prevalence of a plague, can be efficiently supplied with medical attendance, unless medical men are paid for their public services. Mr. Hudson has declared in the City Council (of York) that the cholera "shall be met" in the same "manly way" that it was met before, and that he could never forget the great and eminent services of the medical practitioners, in York, during its former prevalence. Now, these gentlemen were unpaid, and even thanks were doled out to them in a grudging manner. One practitioner, who had abandoned his practice to visit the poor, received some paltry present or other, worth a few shillings, and much was thought of the generosity which dictated the gift.

The manner in which the sick poor are left to the benevolence of the medical profession is disgraceful to the nation. There is as much justice in calling upon the baker or butcher to feed the hungry poor, as in calling upon the medical practitioner to relieve the sick. But to leave this duty unremunerated in times of pestilence, is an intolerable injustice. The physician, or surgeon, goes to his duty often at the risk of his own life and of that of his wife and

children. It is some trifling consolation that, in risking his life, he is providing for them, when he is paid for his services; but when, as in the case of the cholera, all their danger, and anxiety, and toil, are only rewarded by the "I shall never forget" of the wealthy, the question assumes another aspect. The public can easily comprehend that the members of an honourable and dignified profession esteem such rotten praise to be more insulting than silence.

The late Mr. Needham published a history of the cholera as it appeared in the city of York, and in that work he has chronicled the avarice and selfishness of the then city authorities. We hope sincerely that this stain will be wiped away, and that the first steps, in anticipation of the cholera, will be the formation of a fund, by voluntary subscription, for the purpose of fully remunerating the courageous and diligent medical practitioner for his attendance on the sick. Let Mr. Hudson head the list with a hundred pounds, and his "never forget" will then be worth something, which it is not now. This is no medical gentleman's question, but a question of the poor man—a question as to whether the indigent are, in times of pestilence, to be efficiently supplied with competent medical aid.—*Yorkshireman*.

EXPERIMENTS ON SIR WILLIAM BURNETT'S AND M. LEDOYEN'S DISINFECTING FLUIDS.

We have been favoured with the following statement by Dr. Stratton, the gentleman appointed by the Canadian Government to test the merits of the *Disinfecting Fluids*, about which so much has been recently said in the Quebec papers.

It appears that Sir William Burnett's has been pronounced the most efficacious remedy, there being seven voices in favour of Sir William's against three for M. Ledoyen's:—

Quebec Marine and Emigrant Hospital,
Saturday, October 9, 1847.

It having been proposed by Dr. Painchaud, Senior Physician of the Hospital, that the following plan should be adopted, for the purpose of making a comparative trial of the *Disinfecting Fluids* of Sir William Burnett, and of M. Ledoyen, viz:—

1. That each operator should take a basin one-third filled with fæces taken from the same pail.
2. The names of the operators to be marked, one on the bottom of each basin.
3. An equal quantity of *Disinfecting Fluid*, and also of the same strength, to be put into each basin.
4. Both basins to be stirred for the same length of time.
5. The gentlemen of the Hospital to be requested to point out the one which gives out the least smell.

6. And for the removal of any partiality, those giving their opinion not to know until the opinion is given, to whom such or such a basin belongs.

7. A written deposition to be made out and signed by those giving their opinion.

And it having further been proposed by Dr. Stratton, R. N., that as one of the *Fluids* changed feculent matter to a whitish colour, it would better secure an impartial opinion, if the judges would blindfold themselves, this also was agreed to, and, in the presence of witnesses, Dr. Stratton and M. Ledoyen each put in equal quantities of the *Fluids*, and in fifteen minutes after the basins were examined by the umpires; the basins were placed, one on the right and the other on the left, and some distance apart: if the umpire thought that the basin on the right had least smell, he called out "right," and so on. All the medical gentlemen in the Hospital at the time, except Dr. Stratton, gave their opinion. Eleven voted, and as follows:—

A. That the smell in both basins was equal; one vote, Dr. Jas. Douglas.

B. That the right basin had least smell; three votes, namely, Messrs. Martin, Lemieux, and Whelan.

C. That the left basin had least smell; seven votes, namely, Dr. Kimlin, Messrs. Blanchet, Painchaud Jun., Prendergast, Connolly, Reed, and Colonel Calvert.

[This last gentleman, Colonel Calvert, afterwards stated that his vote had been erroneously taken; he said he meant that the left basin smelt the most; this, however, was done after Colonel Calvert had had an opportunity of perceiving the different colours of the contents of the basins, as he was not then blindfolded.]

On looking then at the bottom of the basins, the left one was marked Sir William Burnett's, and the right one, M. Ledoyen's.

Mr. Martin, Hospital Apothecary, was requested to act as Secretary.

We, the undersigned, certify that the foregoing statement is correct.

(Signed) Jos. Painchaud, M.D. Senior Physician, Quebec Marine Hospital; J. Douglas, M.D. Physician, Quebec Marine Hospital; William Kimlin, M.D.; J. Blanchet, M.R.C.S. Lond.; J. Martin, Apothecary to the Hospital; P. Prendergast; P. Connolly; J. Reed; W. Whelan.

MEDICAL APPOINTMENTS.

DR. GEORGE JOHNSON, Medical Tutor of King's College, has been appointed by the Council, Assistant-Physician to King's College Hospital.

MR. EDWARD COCK has been appointed to the office of Surgeon of Guy's Hospital, vacant by the death of Mr. Joann Morgan.

HISTORICAL NOTICE OF THE CHLORIDE OF FORMYLE, COMMONLY CALLED CHLORIC ETHER, OR TERCHLORIDE OF CARBON.

BY DR. PEREIRA, F.R.S.

THE term *chloric ether* was applied by Dr. T. Thomson (*System of Chemistry*, 6th edit. 1820) to the liquid formed by the union of equal volumes of chlorine and olefant gas, and which is described in different chemical works under the name of *chloride of olefant gas*, or the *Dutch liquid*. The formula of this liquid is $C_4 H_4 Cl_4$.

In 1831, Mr. Guthrie, an American chemist, was led to attempt a cheap and easy process for preparing it, by a statement in Silliman's *Elements of Chemistry*, that the alcoholic solution of chloric ether was a grateful and diffusible stimulant. His process, which was published in Silliman's *American Journal of Science and Art*, vol. xxi. p. 64, January 1832, was as follows:—

"Into a clean copper still, put three pounds of chloride of lime and two gallons of well-flavoured alcohol, of sp. gr. 0·844, and distil. Watch the process, and when the product ceases to come over highly sweet and aromatic, remove and cork it up closely in glass vessels. The remainder of the spirit should be distilled off for a new operation. These proportions are not essential—if more chloride of lime be used, the ethereal product will be increased; nor is it necessary that the proof of the spirit should be very high, but I have commonly used the above proportions and proof, and have every reason to be satisfied with them. From the above quantity I have usually obtained about one gallon of ethereal spirit."

Both Guthrie and Silliman erroneously believed the liquid thus obtained, to be an alcoholic solution of the chloride of olefant gas, and hence they termed it *chloric ether*.

In 1831, Soubeiran (*Ann. de Chim. et de Physique*, t. xlviii. p. 131) submitted to distillation a mixture of chloride of lime and alcohol, and examined the distilled product. He found it to consist of—

Carbon	14·39
Hydrogen	2·35
Chlorine	83·26

100·00

The atomic composition which he gave for this liquid was, when reduced to the English mode of calculation, $C H Cl$; or $C_4 H_4 Cl_4$. He termed the liquid *bichloric ether*, because it contains, as he says, twice as much chlorine as is contained in the chloride of olefant gas.

In 1832, Liebig (*Ann. de Chim. et de Phys.* xlix. p. 146) examined the product obtained by submitting to distillation, in a capacious retort, diluted alcohol and chlo-

ride of lime. He analysed the distilled product, but failed to detect hydrogen in it. According to his experiments, the compound consisted of

Carbon	12·6523
Chlorine	88·18

100·8323

The formula which he deduced from this analysis was $C_4 Cl_8$, and he called the liquid *chloride of carbon*.

In 1834, Dumas (*Ann. de Chim. et de Phys.* lvi. 134, 1834) examined this liquid. He showed that Soubeiran had not obtained it pure, and that Liebig had made an error with regard to its composition. From his analysis of the pure liquid, he deduced the following as its real formula: $C_2 H Cl_2$.

On account of the relation of its composition to that of formic acid ($C_2 H O_2$), Dumas denominated this liquid *chloroform*.

Liebig has admitted the accuracy of Dumas's analysis by adopting his formula of the composition of this liquid. He has, however, discarded Dumas's name for this substance, and adopted that of the *chloride* or *perchloride of formyle* (*formyl-chlorid*).

Thus, then, it appears that the liquid now used in medicine under the names of *chloric ether* and *terchloride of carbon*, is altogether different from the chloride of olefant gas, to which the name of chloric ether was originally applied. Both of these names (chloric ether and terchloride of carbon) have been given to it from erroneous notions entertained of its nature and composition.—*Pharmaceutical Journal* for March 1846, Vol. V., No. 9.

MEETINGS OF MEDICAL SOCIETIES APPOINTED FOR THE ENSUING WEEK.

Westminster	Sat. Nov. 27, 8 P.M.
Guy's Physical	" " " "
Hunterian	Wed. Dec. 1, 8 "
Lond. Hosp.	Thurs. " 2, 8 "
King's College	" " " 7 "

OBITUARY NOTICE OF M. DIEFFENBACH.

WE last week reported the death of this distinguished Prussian surgeon, and we now record a few particulars attending his decease, as they furnish a remarkable instance of the suddenness with which an individual, apparently in the enjoyment of the most perfect health, may be cut off. On the morning of the 11th inst., M. Dieffenbach arrived at the Hospital of La Charité at Berlin in his usual state of health; and, before commencing his clinical lecture, he was visited by two French physicians. He introduced to them a patient on whom he had operated for aneurism the day before, and he then sat down on the sofa with his two visitors, and described to them the steps of the operation. It was observed that he suddenly became silent, and inclined his

head towards one of these gentlemen, as if about to whisper to him. As he did not move from this position, it was suspected that he was ill. Dr. Angelstein was immediately on the spot, and attempted to bleed him, but it was found that life had ceased. No inspection had been made, and the cause of death was unknown.

M. Dieffenbach was born at Königsberg in 1796, and was consequently in the fifty-second year of his age. During the war of 1814-15 he served in the army as a volunteer. He had previously devoted himself to theological pursuits, and, on the general peace, he for the first time took up the study of medicine. In 1822 he went to Paris, and studied under the famous Dupuytren, of whom he was a devoted admirer.

Throughout his career he bore the character of an upright man. His mind was fertile in invention and in the ingenious appliances of art; and he is said to have possessed great manual dexterity as an operator. Without having originated any brilliant discovery, his name is associated with many ingenious surgical operations, and he may be regarded as having contributed a fair share to the progress of modern surgery. He is well known to have been the first to propose the operation for strabismus. At his death he was a Professor in the University of Berlin, and President of the Council of Health. He received many honours in his own country, and was a member of most of the scientific associations of Europe. It is understood that he has left behind him, in manuscript, a work on the Application of Ether Vapour in Surgical Operations, and a History of Surgery.

BIRTHS & DEATHS IN THE METROPOLIS During the week ending Saturday, Nov. 13.

BIRTHS.	DEATHS.	Av. of 5 Awt.
Males.... 638	Males.... 549	Males.... 538
Females.. 637	Females.. 549	Females.. 518
1275	1098	1046

DEATHS IN DIFFERENT DISTRICTS.

(34 in number;—Registrars' Districts, 129.
Population, in 1841, 1,915,104.)

West—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,336)	173
NORTH—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 366,303)	215
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	210
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 393,247)	221
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich .. (Pop. 479,469)	279
Total	1098

CAUSES OF DEATH.

ALL CAUSES	1098	Av. of 5 Awt. 1046
SPECIFIED CAUSES	1097	1039
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	332	211
<i>Sporadic Diseases, viz.—</i>		
2. Dropsy, Cancer, &c. of uncertain seat	92	104
3. Brain, Spinal Marrow, Nerves, and Senses	181	157
4. Lungs and other Organs of Respiration	269	233
5. Heart and Bloodvessels	43	34
6. Stomach, Liver, and other Organs of Digestion	97	74
7. Diseases of the Kidneys, &c.	9	9
8. Childbirth, Diseases of the Uterus, &c.	17	14
9. Rheumatism, Diseases of the Bones, Joints, &c.	11	7
10. Skin, Cellular Tissue, &c.	3	2
11. Old Age	46	65
12. Violence, Privation, Cold, and Intemperance	27	29

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	42	Convulsion	43
Measles	58	Scarlatina	58
Whooping-cough	71	Pneumonia	79
Hoopings-cough	17	Phthisis	131
Diarrhoea	0	Dia. of Lungs, &c.	7
Typhus	68		
Dropsy	16	Teething	6
Sudden deaths ..	4	Dia. Stomach, &c.	8
		Dia. of Liver, &c.	16
Hydrocephalus ..	36	Childbirth	13
Apoplexy	14	Dia. of Uterus, &c.	3
Paralysis	17		

REMARKS.—The total number of deaths was 53 above the weekly autumnal average. It is remarkable that the deaths of males and females were precisely equal, and that the births only differed in the sexes by one.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	29.34
“ “ Thermometer	49.3
Self-registering do. max. min.	27°
“ in the Thames water — 30° —	51.2
* From 12 observations daily. b Sea.	

RAIN, in inches, 0.39: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was nearly 7° above the monthly mean (42.9°).

NOTICES TO CORRESPONDENTS.

Dr. Searle's letter will be inserted. Dr. Glover's remarks on Chloroform next week. We regret that the space occupied by the Proceedings of Societies has compelled us to delay the insertion of the communication of Mr. H. Smith and other correspondents.

Mr. Grantham's paper has been received. We shall, if possible, complete the series of Dr. Wardell's papers on Fever in the following number.

We could not insert anonymously the letter signed M.D. Cantab.

Dr. Rowland's paper will have early insertion.

RECEIVED.—Mr. J.W. Robinson.—Mr. L. Marsh.

CORRIGENDUM.—In last number, review of Mr. Wilson's treatise on Ringworm, p. 896, col. 2, line 31 from top, for “scurvy,” read “scurfy.”

Lectures.

LECTURES

ON THE

DISEASES OF INFANCY AND
CHILDHOOD,

Delivered at the Middlesex Hospital.

By CHARLES WEST, M.D.

Physician-Accoucheur to, and Lecturer on Midwifery at, the Middlesex Hospital, and Senior Physician to the Royal Infirmary for Children.

LECTURE XVI.

Lobar Pneumonia—More common in early life than has been supposed—Its general characters the same as in the adult—Some appearances deserving special notice, viz. sub-pleural ecchymoses, pneumonic abscess, and emphysema of the un-inflamed portions of the lung.

Frequency and causes of inflammation of the respiratory organs—Influence of age—of previous attacks—of various diseases.

Symptoms of ordinary bronchitis—A more serious disease than in the adult, and why—Symptoms of capillary bronchitis—Illustrative case—Results of auscultation.

Treatment of bronchitis—Rules for depletion, and the use of antimony—The dyspnoea not always dependent on severity of the inflammation—Treatment of this nervous dyspnoea—Treatment of bronchitis in its chronic stage.

We were occupied during the last lecture with the examination of some of the results of inflammation of the respiratory organs in early life, and considered more especially those changes which inflammation produces in the air-tubes. You were told on that occasion that the disease does not always remain limited to the bronchi or pulmonary vesicles, but that it sometimes involves the substance of the lung, and thus gives rise to the appearance of a number of small circumscribed patches interspersed throughout its tissue, either red, hard, and solid, or grey from the infiltration of pus; while, if the mischief advance one step further, it may lead to the destruction of the parenchyma of the organ at these points, and thus produce numerous minute abscesses—a condition which has thrice come under my own observation. Cases of this kind, constituting true lobular pneumonia, though somewhat less rare than in the adult, are yet of very infrequent occurrence. It is almost needless to remind you that the contrary opinion resulted from persons not having learned till

xi.—1044. Dec. 3, 1847.

very lately to distinguish between that solidity of the lung which is produced by inflammation, and that which results from the mere collapse of its air-cells.

The exaggerated estimate of the frequency of lobular pneumonia, and the peculiar character of the field presented at the Hospital for Children at Paris, in which the most diligent and most successful students of children's diseases laboured, led to an under-rating of the frequency and importance of lobar pneumonia such as is met with in the adult; and hence you will find but little said concerning it in many most valuable works of our continental neighbours. *Lobar pneumonia*, however, is often met with in early life both as an idiopathic and a secondary affection, giving rise to the same morbid appearances as in the adult, and requiring a very similar treatment.

Not only are the physical characters of the lung in lobar pneumonia the same in childhood as in adult age, but the three states of engorgement, of red and of grey hepatization, are observed with much the same frequency at the one period of life as at the other. I find that after rejecting all cases in which pneumonia occurred as a complication of phthisis, or of acute pleurisy, and in which the results might be modified by the disease to which the inflammation of the lung succeeded, I have a record of 47 cases in which the condition of the inflamed lung was carefully noticed.

In 5 of these cases the 1st and 2d stages of pneumonia co-existed.

" 4 the 1st and 3d co-existed.

" 13 the 2d and 3d co-existed.

" 11 all these stages co-existed.

" 3 the lung was in the 1st stage only.

" 6 the lung was in the 2d stage only.

" 5 the lung was in the 3d stage only.

—
47

This result tallies very closely with that obtained by M. Grisolle,* on an examination of 40 cases of pneumonia in the adult.

In 4 cases the 1st and 2d stages of pneumonia co-existed.

" 3 the 1st and 3d co-existed.

" 16 the 2d and 3d co-existed.

" 2 all three stages.

" 7 the lung was in the 2d stage only.

" 8 the lung was in the 3d stage only.

—
40

It will be seen, on a comparison of these tables, that the third stage of pneumonia occurs very nearly as often in children as in adults, having been met with in the former in the proportion of 68, in the latter in the proportion of 72 per cent.; and the main difference between the two consists in the

* *Traité de la Pneumonie*, 8vo. Paris, 1841, p. 18.

greater frequency with which all three stages of pneumonia co-exist in the young subject. This peculiarity of pneumonia in childhood is probably due to the tendency which the disease then displays to involve a large extent of pulmonary tissue; and to the same cause we must attribute the frequency of double pneumonia in early life, which, in the cases that came under my notice, preponderated greatly over those wherein only one lung suffered. The well-known law, according to which pneumonia of the right lung is more common than pneumonia of the left, holds good in childhood, nor is the frequency of concomitant pleurisy much, if at all, less in the child than in the adult. The contrary opinion arose from the error to which reference has so often been made, of regarding cases of collapsed lung, either with or without bronchitis, as instances of red hepatization of the pulmonary substance.

Instead of inflammation of the lungs being less active in the child than in the adult, there are some facts which would seem to lead to a directly opposite conclusion. Such are the frequency with which, in fatal pneumonia in children, ecchymoses are found beneath the pleura covering the inflamed lung, the more common occurrence of pulmonary abscess in early than in adult life, and the very extensive emphysema which is often observed in those parts of the lung to which the inflammation has not extended.

The sub-pleural ecchymoses appear to result from the rupture of some of the minute capillaries of the lungs, in consequence of the great disturbance of the circulation through them. They are usually small, like petechiae, but occasionally they attain a larger size, and once or twice they have presented themselves to me extending a little way into the tissue of the lung, constituting little spots of pulmonary apoplexy, about the size of a millet-seed, or even a little larger. They are most numerous on the posterior surface of the lungs, and especially in parts where the lung has become hepatized, though by no means confined to those situations.

The termination of pneumonia in abscess of the lung is so rare an occurrence in the adult, that Laennec did not meet with it above five or six times in the course of several hundred examinations of persons who had died of inflammation of the lungs. In the child, however, the case is otherwise, for abscess of the lung has come under my observation in three out of the 47 examinations of cases of lobar pneumonia, on which my present remarks are founded. In one of these cases, that of a boy, aged 20 months, who died on the 14th day after the commencement of an illness which resembled remittent fever in many of its symptoms, but was associated from the outset with the indications of pneumonia,

the following appearances were observed. The upper and middle lobes of the right lung were connected to each other, and to the walls of the chest, by adhesions which were chiefly recent. Nearly the whole of the upper lobe was solid, and sank in water. It was of a mottled reddish grey colour, in which grey predominated; it broke with a granular fracture, and was readily reduced to a dirty putrilage. Near the apex was a portion the size of a walnut, which was already soft and in a state of quagmire. The upper two-thirds of the middle lobe were in the same condition as the upper lobe; the lower third was emphysematous. In the centre of the middle lobe was a cavity the size of a bean, irregular in form, intersected by the remains of some vessels, lined by a thin layer of yellow lymph, and surrounded by lung in the third stage of pneumonia, but neither in that lobe nor in any part of the pulmonary tissue was there the least trace of tubercle, and the only indication of phthisical disease consisted in one bronchial gland having become converted into tubercle which had undergone the cretaceous transformation. The lower lobe of the right lung was in the first stage of pneumonia; the left upper lobe was quite healthy; the left lower lobe was in a state of mingled red and grey hepatization. The other two cases occurred in children who had suffered for some weeks from whooping-cough, and in both, the lungs contained numerous semi-transparent, grey, tubercular granulations. One of the children was a boy, five years old; the other a little girl, aged two years. In the case of the former, the abscess as large as a walnut was situated at the lower border of the upper lobe, extending a little into the lower lobe. In the latter it was of the size of an unshelled almond, and occupied a similar position with reference to the right upper and middle lobes. The characters of the abscess were the same in both instances, being situated almost immediately beneath the pleura; from which a wall of lung not above two lines in thickness separated it. Its cavity was partly filled with a yellowish, puriform, very tenacious fluid, like very tenacious pus, and which did not bear any resemblance to softened tubercle. It was not lined by any membrane: there was no appearance of tubercular deposit in the hepatized lung in its immediate vicinity, which was generally in the second stage of pneumonia, nor was it situated near to, or in communication with, any large bronchial tube.

The lung in childhood shows a much greater tendency to pass into a state of gangrene than in adult age. It may be doubted, however, whether this gangrene is the result of the intensity of the inflammation so much as of some peculiar change in the blood which favours the occurrence of mortifica-

tion. The occasional prevalence of gangrene of the lung and of other parts, as an endemic affection in the Hôpital des Enfants at Paris, favours the latter supposition, and the only instance of it that has come under my own observation in the child is quite in accordance with it.

The emphysematous condition of the un-inflamed portion of the lung, in cases of fatal pneumonia in early life, seems to be connected with the rapidity of the advance of the disease. It is usually most obvious at the anterior part of the upper lobes of the lungs, and at the margin of the other lobes, and almost always bears a marked relation to the shortness of the patient's illness, and the extent of lung which has been invaded by the inflammation. The delicate structure of the lung in early life seems to be the cause why the pulmonary vesicles so easily become dilated during the hurried inspiratory effects, by which the child endeavours to make up for the derangement of a part of that machinery by which the vital changes in the blood are effected. It is probably, as suggested by MM. Rilliet and Barthes, to its production in this way, that may be referred the origin of many of those cases of emphysema which we meet with in the adult, but which date back from early childhood.

The causes which give rise to inflamma-

tion of the lungs and air-tubes are, to a great extent, the same at all periods of life, so that we need not devote much time to the special study of those which tend to produce it in childhood. It should be borne in mind, however, that the fluctuations in temperature, or the biting wind, or the cold weather, which may be encountered with impunity by the robust adult, may prove most deadly when they act on the feeble frame and delicate organs of the child. Hence it is, in great measure, that inflammation of the respiratory organs is so much more frequent, and so much more fatal, in childhood than in adult age, and in infancy than in childhood. The fact is well shown by the fifth Report of the Registrar-General, from which it appears that 72 per cent. of the total mortality from inflammation of the lungs and bronchi, in the metropolis, took place in persons under 15 years of age: 68 per cent. under 5, 61 under 3, and 31 per cent. under 1 year. But the tendency to these affections, as is shown in the following table, is not greatest in the first month of life, diminishing in proportion as the child advances in age and increases in strength, but the time when they are most prevalent coincides exactly with the time when the susceptibility of all the mucous membranes is at its highest point, namely, the period of dentition.

TABLE, showing out of 166 cases of children dying from various diseases, in whom I carefully examined the thoracic viscera, the number of instances in which the lungs, bronchi, and pleura, presented no signs of recent inflammation, and also those in which signs of it were discovered.

The first line represents the former, the second the latter class of cases.

Under 1 mth.	From 1-6.	From 6-12.	From 12-18.	From 18-2 yrs.	From 2-3.	From 3-4.	From 4-5.	From 5-6.	From 6-7.	From 7-8.	From 8-9.	From 9-10.	From 10-11.	From 11-12.
4	12	15	12	4	10	6	4	6		2	1	2	1	
	3	10	13	15	12	9	8	4	3	4	2	2		2

This table illustrates the fact mentioned in the last lecture, that, when the child is first born, the mucous membrane of the respiratory organs is endowed with but little of that susceptibility which it afterwards acquires, and that accordingly those diseases whose point of departure is from that membrane are far less frequent during the first six months of life than they become during the succeeding eighteen months; while, from the completion of the second year up to the time of puberty, they go on diminishing in frequency and fatality. And there are important practical inferences which may be deduced from the facts we have just mentioned. They teach us not only that a catarrh is a much more serious thing in infancy than in adult age, but also that it is more serious at one period of infancy than at another, and they warn us to guard a

child, during the time that the process of teething is going on, with double care against all causes that are likely to excite inflammation of its respiratory organs.

There are some diseases which, after having occurred once, confer on persons an immunity from subsequent attacks. This, however, is far from being the case with bronchitis or pneumonia in early life, but the susceptibility of the respiratory organs appears to increase in exact proportion to the frequency with which they have already suffered,* and a child who has once been

* In a tract on Pneumonia in Children, published some years ago in the British and Foreign Medical Review, I mentioned that of 78 children who came under my care for inflammation of the lungs, 31 were stated to have had previous attacks of the disease; 31 once; 4 twice; 3 four times; and 4 were said to have had it several times, though the exact number of seizures was

attacked by inflammation of the lungs or air-tubes is more likely to have a second attack brought on by a slight change of temperature, than another who had never suffered from it would be to experience a seizure from a much graver cause. With advancing age this susceptibility seems to wear out, the child outgrows it; but we should act most unwisely if we were to sanction its exposure to the cold with the view of hardening it against its influence.

The importance of inflammatory diseases of the respiratory organs depends not merely on the frequency of their occurrence as idiopathic affections, but also on their tendency to supervene in the course of other maladies. This tendency, though very evident at all ages, is especially remarkable in early life, as is apparent from the fact that, in 26 only of the 87 cases enumerated in the former table, was the inflammation an idiopathic affection. When we come to the subject of measles, hooping-cough, croup, diarrhoea, and remittent fever, it will be necessary to study these secondary attacks of bronchitis and pneumonia with attention, since they constitute frequent and serious complications of those diseases against which it behoves us to be most anxiously on the watch.

Before we pass to the examination of the symptoms of bronchitis and pneumonia, it may be as well to see what light can be thrown from the table we have more than once referred to, on the question of what diseases predispose to inflammation of the respiratory organs. The number of observations on which it is based is too small to warrant any very positive conclusions, but some of the results which they yield are not without interest.

In 65 cases the respiratory organs presented no sign of recent inflammation; the children having died of the following diseases.

Trismus	3
Meningeal apoplexy	2
Cerebral congestion	1
Inflammation of the brain	1
Acute hydrocephalus	25
Cerebro-spinal arachnitis	3
Chronic hydrocephalus	1
Tubercle of the brain	3
Cancer of the brain	1
Croup	2
Laryngismus stridulus	2
Phthisis	5
Anasarca	1
Anasarca after scarlet fever	1
Diarrhoea	4
Atrophy	3
Congenital syphilis	1

not mentioned. Of these 31, 10 were under two years of age, 10 between two and three, and the remaining eleven between three and six.

Cancer of the oris	2
Lumbar abscess	1
Scrofulous disease of the vertebrae	1
Fungus hæmatodes of the liver	1
" " " kidney	1

In 14 cases, though there was no sign of inflammation, yet a more or less considerable portion of the lung was collapsed, but restored by inflation to its natural condition, or presented the physical characters of collapsed lung in so marked a degree as to preclude the possibility of error.

The cause of death in these 14 cases was—

Congenital atelectasis	1
Induration of the cellular tissue	1
Convulsions	1
Meningitis of the convexity of the brain	1
Congestion of the brain occurring in the course of hooping-cough	1
Tubercle of the brain	1
Atrophy of one hemisphere of the cerebellum	1
Atrophy	5
Laryngismus stridulus	1
Fungus hæmatodes of the kidney	1

In 47 of the above 79 cases the pulmonary tissue was quite free from tubercle.

In 22 the lungs contained crude tubercle only, chiefly, but not entirely, in an early stage.

In 3, some softened tubercles.

In 7, some tubercular cavities.

Of the remaining 87 cases, either the pulmonary substance, the bronchi, or the pleura, shewed signs of recent inflammation.

The pleura was mainly affected in 12 of these cases, its inflammation having been idiopathic only in 4. In 6 of these cases the lung was inflamed; in the other 6 merely compressed.

In 19 cases the inflammation was chiefly or entirely confined to the bronchi, and in 6 of these the inflammation was idiopathic.

In 56 cases pneumonia prevailed, which was idiopathic in 17, and secondary in 45 instances.

In the 59 cases of acute secondary inflammation of the lungs or bronchi, the patients had suffered from the following diseases:—

Acute pleurisy	6
Hooping-cough	16
Chronic bronchitis	1
Coryza	1
Croup	3
— consequent on measles	2
Measles	5
Scarlatina	3
Anasarca after scarlatina	1
Remittent fever	2
Cancer of the oris after remittent fever	1
Diarrhoea	3

Acute rheumatism	1
Phthisis	7
Convulsions	1
Acute meningitis	2
Acute hydrocephalus . . .	3

Of the whole 87 cases—

In 69 the pulmonary tissue was free from tubercle.

In 10 it contained tubercle unsoftened.

“ 5 “ “ softened.

“ 3 “ “ tubercular cavities.

We will now pass to the study of the symptoms of *bronchitis*, and will commence with the examination of the most simple form of inflammation of the air-tubes—namely, that which develops itself out of ordinary catarrh. In such a case the child has for some days seemed to suffer from nothing more serious than a common cold; but, by degrees, instead of the cold and cough subsiding, the heat of skin becomes more considerable, the cough tighter, more frequent, and more painful, the child sometimes crying after each cough; the pulse becomes more rapid, the respiration wheezing, hurried, and often somewhat irregular. These graver symptoms often steal on very gradually, and among the poor it by no means seldom happens that the disease has already attained an advanced stage, and the condition has become one of very considerable peril, before the parents, never very observant of those ailments that are not attended with acute suffering, take the alarm. The flush of the face and the heat of skin become increased, the respiration more laboured, and the cough more troublesome towards evening, and the first hours of the night are usually very restless, but the child then falls asleep, and often dozes tranquilly for some hours; it then generally awakes with its respiration very oppressed, for the secretions have been accumulating in the smaller bronchi, and have now begun to impede the entrance of the air. An attack of cough probably comes on, which very likely ends in vomiting and the rejection of some mucus, and then by degrees the breathing becomes more easy, and the child may for a short time seem comparatively cheerful. The temperature of the surface, though increased, is variable, and, if the disease continue for several days, perspiration will be observed occasionally to break out on the body, while the pulse, though quickened, is not very much accelerated, and the tongue continues moist throughout. The ear detects nothing in the chest besides a mixture of rhonchus sibilus, and largish crepitation, the dry sounds preponderating at the upper, the moist at the lower part of the chest, and being vastly more abundant behind than in front. Now in the adult a condition such as this would excite but little apprehension, but in the child it must be

borne in mind that nothing more is needed than a copious secretion of mucus in the bronchi, or a feeble condition of the vital powers, to prevent the air from freely entering the pulmonary vesicles, and thus to induce the collapse of a large portion of the lung. Thus it is, at least as I apprehend, that we must explain many of the instances in which urgent dyspnoea, and all the symptoms of serious pulmonary disease, developed in the course of a few hours out of what had seemed to be nothing more than a rather severe cold, or a bronchitis of moderate intensity. This, too, accounts for the occasional sudden super-vention of dulness on percussion, and of bronchial respiration in the child, so that you may discover them in the morning in a situation where over-night the percussion was good, and no sound was heard of graver import than large crepitation. This rapid change in the auscultatory phenomena has been noticed by Dr. Stokes as occasionally happening in the pneumonia of the adult.* That distinguished physician offers no explanation of the occurrence, but we can now understand what is its true import, and what the reasons are for its being met with so much oftener in the child than in the adult.

But, notwithstanding this danger, which is great in proportion to the youth of a child, yet most cases of idiopathic bronchitis that come on gradually, developing themselves out of previous catarrhal symptoms have a favourable termination; and, as a general rule, it may be stated that an attack which is long in arriving at its acme, is seldom very dangerous in its character. Pure idiopathic bronchitis, occurring in an otherwise healthy child, in most cases subsides in the course of a few days, leaving the patient with an increased susceptibility to the influence of those causes which brought on the first attack, and perhaps with a degree of debility, the recovery from which may be protracted for many weeks.

There is, however, a form of acute bronchitis which is often, though not always, idiopathic, that runs its course with much rapidity, and generally tends to a fatal termination. In this, the *suffocative catarrh* of some writers,—the *capillary bronchitis* of others,—the smaller air-tubes throughout the whole or a considerable portion of the lungs are attacked either in connection with the larger bronchi or independently of them, and the inflammation, which is very intense, usually terminates in the abundant secretion of pus, or in the formation of false membrane that nearly obliterates their cavity, or, involving the pulmonary vesicles themselves, it gives rise through a considerable extent of the lungs to those appearances

* On the Diseases of the Chest. 8vo. Dublin, 1837, pp. 311 and 337.

which have been described under the names of vesicular pneumonia and vesicular bronchitis.

Its attack is sometimes sudden, though in the great majority of cases it is preceded for a few days by the ordinary symptoms of catarrh, or it supervenes on that condition of bronchial irritation which accompanies or follows one or other of the eruptive fevers. Under these latter circumstances there is either a progressive though rapid increase in the severity of the bronchitic symptoms, or there is a sudden outbreak of fever and dyspnoea, and the cough becomes all at once frequent, short, and hacking. The disease soon attains a very considerable intensity, the face becomes anxious and oppressed, the eyes heavy, the manner distressed, the respiration very hurried, generally irregular, and interrupted by the cough, which often seems to occasion pain. The restlessness is often extreme, and the position which the child assumes very variable: but, in whatever attitude it may have placed itself, it does not like to be disturbed, and endeavours at once to return to its former posture. If spoken to, the child's answers are hurried, and its manner impatient, as though it were too much taken up with its suffering, or with the business of respiration, to be able to reply to questions. Sometimes it will say that it feels stuffed, or will complain of distress about the sternum, or of pain at the epigastrium: while pressure on the abdomen, by interfering with the free descent of the diaphragm, always produces much discomfort. There is no appetite; and, though at first the thirst is very considerable, yet the child soon ceases to take much drink, for it wants breath to swallow fluids in any quantity, and therefore does little more than moisten its lips. At the same time, the tongue is moist, and either differs but little from its condition in health, or it has a thin coating of yellowish fur; the bowels are usually constipated, and not only are nausea or vomiting seldom present, but emetic remedies often fail of their ordinary effect when given in the course of this affection. As the disease advances, the cough becomes less hacking, though it continues very frequent: it sometimes puts on a paroxysmal character, and returns in fits somewhat like those of whooping-cough, except that each fit of coughing is shorter, does not terminate with a hoop, and is seldom attended with expectoration. Even if the cough be accompanied with expectoration, it is seldom that anything is spit up more than a little mucus tinged with blood, or now and then a little pure blood, while in a few instances small shreds of false membrane have been seen intermingled with the mucus. For a time the respiration grows more and more hurried, and paroxysms of

dyspnoea continue to occur at irregular intervals almost to the last. In these paroxysms the child's distress and restlessness are extreme, and it sometimes throws itself wildly about the bed. The breathing does not, however, go on increasing in rapidity until the patient's death; but, after the disease has reached its acme, the respiration often grows less frequent, though more irregular and more variable. The face loses its flush, and, instead, acquires a livid hue; the cough becomes smothered, and occurs less often; the pulse grows in frequency and fails in power; and though there is often a diminution of the restlessness, yet, if able to talk, the child will generally say that it is no better. As death approaches, though the respiration grows more laboured and more abdominal, yet the child's suffering generally diminishes, for a state of somnolence gradually steals over it, in which it lies till roused by an attack of cough or by a paroxysm of dyspnoea, and then, after a struggle for breath, it subsides into its former drowsiness. The struggles for breath grow feebler with each returning paroxysm, the drowsiness becomes more profound, and the patient dies.

It may be worth while to fill up what is wanting in this brief sketch of the disease, by the history of a case that displayed many of its most characteristic features.

A little boy, aged 7½ years, after suffering for a few days from general feverishness, with a constipated state of the bowels, was attacked on the 6th of April with incessant short cough and hurried breathing, for which symptoms he was ordered to be bled to ʒvj., although only ʒij. of blood were obtained. Twelve leeches were applied to his chest, and powders containing gr. ij. of calomel and gr. ¼ of antimony were given him every four hours. The leech-bites bled profusely, and afforded some relief to the dyspnoea; but, notwithstanding this, the child passed a very restless night. The next morning he was found lying on his back, with his knees drawn up towards the abdomen, his face anxious, his eyes heavy, his skin dry, breathing at the rate of 78 inspirations in the minute, his respiration being often interrupted by a short, hacking cough. His pulse was 138, and sharp. He complained of no pain, except when the abdomen was pressed on, but seemed then to suffer considerable uneasiness about the epigastrium. Percussion of the front of the chest occasioned so much pain that it could not be practised satisfactorily, and behind it did not elicit any difference between the two sides. Throughout the whole of both lungs sub-crepitant r le was heard: it was smallest in the inferior dorsal region, but was nowhere as small as true pneumonic crepitus. He was ordered to be cupped to ʒv. between

the shoulders, and tartar emetic was ordered in $\frac{1}{2}$ gr. doses every ten minutes until free vomiting should be produced, after which the powders were to be resumed. He took gr. ij. of the tartar emetic without the slightest effect being produced; and on the 8th his respiration had risen to 98, and his pulse to 144. On the 9th his respiration had sunk to 72, but the pulse had risen to 156; the cough was usually short and hacking, but attacks of it now came on at intervals which resembled a paroxysm of whooping-cough. The tartar emetic was now given in doses of gr. ss. every two hours, but no effect was produced by it beyond producing a feeling of nausea, and occasioning very slight vomiting twice. For an hour or two early in the morning of the 10th he seemed somewhat better, but this improvement soon passed away, and he began to complain of great pain in the chest, whereas his answer previously to all inquiries had been, "I am so stuffed." His cough was more severe, and the mucus which he now and then expectorated with it was sometimes tinged with blood. He passed another night of distressing restlessness, but on the morning of the 11th grew quieter, and, when not disturbed, lay on his right side dozing. If spoken to, he gave intelligent answers, and said, "I am no better," though, if left alone, he made no complaint. He continued drowsy all through the day. Towards evening he had a few minutes of cheerfulness, and spoke of his own accord to his father. His mother lay down by his side: he slept, and seemed to breathe gently; she slept too, and when she awoke at 4 A.M. on the 13th her boy was dead: life had fled so quietly, that, though her arm was round him, she had not been disturbed.

I need not detail to you the appearances found on dissection of the body, since they were such as have been mentioned as characteristic of capillary bronchitis, though the air-tubes, notwithstanding their intense injection, contained neither pus nor false membrane, and very little mucus. The case illustrates the remarks already made on the symptoms of the disease, and illustrates, too, the remarkable results which percussion and auscultation yield in this affection, since sub-crepitant râle continued to be heard to the last, unmixed with bronchial breathing or pneumatic crepitus, while so long as percussion could be practised, it failed to elicit a dull sound anywhere.

Though the indications afforded by auscultation and percussion are often sufficiently characteristic of this disease, yet there are some circumstances which may occasionally render their information doubtful. The child is sometimes so extremely alarmed, and the sensibility of its surface so much increased, that we have much difficulty in

percussing the chest; but we shall usually be able to distinguish this from the painfulness of the walls of the thorax which attends pleurisy, by finding that it is not limited to one half of the chest, but that it is felt equally on either side, and as much in front as behind. If we can succeed in percussing the chest, however, it will be found to yield a natural, sometimes even an increased, degree of resonance, while little if any difference can be discovered between the sound afforded by the upper and that given out by the lower part of the chest; or, should such be perceived, it is generally due to pneumonia having supervened. The ear detects a scanty transmission of air, attended at first with rhonchus and sibilus, but soon with a universal sub-crepitant râle, heard most distinctly on the child making a deep inspiration. By the term sub-crepitant râle, it can be hardly necessary for me to say that a sound is meant smaller in character than large mucous râle, but larger than the true small crepitation of pneumonia. As the disease advances, the only change that takes place consists in this sub-crepitant râle being replaced by a larger mucous râle, the result not of any improvement in the child's condition, but of the air scarcely penetrating beyond the larger bronchi; for you will still hear the smaller sound during the deep inspiration that follows an attack of cough.

This form of bronchitis is one not only very dangerous, but likewise very rapid in its course to a fatal issue. I saw one little girl in whom it came on while convalescent from an attack of measles fourteen days before, who died within forty-eight hours; and the boy whose case has been just related died in less than four days from the appearance of any serious symptom. These, however, were instances of a rather unusual rapidity in its course, and from five to eight days, which is the estimate of its duration formed by M. Fauvel, who has written a very valuable essay on the disease, is probably not far from the true average.*

But we may now pass to the treatment of bronchitis, in which you find those general rules applicable that have already been laid down when we were speaking of catarrh; while in exact proportion to the severity of the symptoms will be the care with which you must watch against the supervention either of pneumonia or of that collapse of the lung which forms so grave an occurrence in early childhood. In the ordinary forms of bronchitis, general depletion is neither required nor well borne, and even the local abstraction of blood must not be heedlessly resorted to. Leeches may be applied at the

* *Recherches sur la Bronchite Capillaire*, etc. 4to. Paris, 1840; republished in a more extended form in Vol. 2 of the "*Mémoires de la Société Médicale d'Observation*," 8vo. Paris, 1844.

commencement of the attack, if the child be strong, and the febrile disturbance considerable, and they may be employed subsequently, if, while the child's powers are still undiminished, the cough should become shorter and more hacking, and the crepitation either very general and abundant, or smaller in the lower than in the upper lobes. They must not be employed with the view of at once cutting short the attack, nor must we be led by the relief afforded by their first application to repeat them in the hope of subduing the disease by depletory measures. I usually apply about four leeches to a robust child of two years old, and it is very rarely that I repeat their application. The situation in which they are applied is not altogether unimportant. I prefer applying them beneath the scapulae; partly because there may be some advantage in drawing blood from the neighbourhood of that part of the lungs which is most likely to become congested, but still more because the child is not alarmed as it would be if they were put on the front of the chest, where they are within its sight, and because in this situation it is unable to irritate the bites by picking them, as it is very apt to do when they are beginning to heal.

There is in these cases the less excuse for over-depletion, since we are possessed in the tartar emetic of a most powerful means of subduing the disease. In a healthy child suffering from a bronchitis of moderate severity, I sometimes give it in the form of James's powder, combined with a small quantity of calomel and ipecacuanha, every four hours for the first twenty-four or thirty-six hours. This combination usually acts on the bowels slightly as well as on the skin; and if the child be now relieved, the calomel may be suspended, and small doses of antimonial and ipecacuanha wine may be given instead in a mixture.

A severer attack of the disease would call for the use of antimony in larger doses, so as to obtain its emetic effect at first, and afterwards, by the repetition of the remedy every hour or two hours, to keep the child for one or two days under its influence. Even in cases where the disease is not so severe as to require the energetic employment of antimony, there is generally an exacerbation of fever and dyspnoea towards evening, and this is often much relieved by an emetic of antimony and ipecacuanha, which may also in many cases be repeated with advantage in the morning, when the child having been asleep for some hours, during which the mucus has been collecting in the bronchi, it breathes with difficulty on awaking, until the air-tubes having been freely emptied by an effort at vomiting, the air is once more enabled freely to permeate the lungs. Even in those cases which at first required the

constant use of large doses of antimony, it is a matter of importance to dispense with them as soon as we can with safety, and to substitute the use of emetics at intervals, while we employ some milder expectorant medicine between the doses of the emetic. It can scarcely be necessary to remind you that there are few medicines which exert so depressing an influence on the muscular powers as the tartar emetic. If, therefore, in a child whose air-tubes are already nearly filled with the abundant secretion, you carry the depressing effect of antimony too far, the air will no longer be inspired with force sufficient to make it reach the smaller bronchi, and collapse of the lung will consequently take place. It follows, then, that we must not venture to carry the depressing effects of antimony so far in the child as we may safely do in the adult, but when the medicine has either ceased to vomit, or is merely regurgitated without effect, we must either suspend it altogether or greatly diminish its dose, or merely give it at distant intervals, so as to obtain its emetic action, while we allow time between the doses sufficient to allow of the child's perfectly recovering its powers. The effect of vomiting, on the other hand, is useful in two ways, for it not only empties the air-tubes of the mucus that obstructs them, but it also occasions several deep inspirations to be made, by which the air is drawn into the remotest parts of the lungs, and their tendency to collapse is thus prevented.

Your attention has on more than one occasion been called to the remarkable tendency of the nervous system in early life to sympathize in the affections of other parts. This tendency is often very evident in inflammation of the respiratory organs, and, accordingly, you must not always take the degree of dyspnoea in a case of infantile bronchitis as a measure of the affection of the lungs, since it may be only an evidence of the sympathy of the nervous system. If you treat this symptom actively without having first inquired into its import, you may destroy your patient. When first taken ill, indeed, the child's respiration was hurried and laborious; you applied leeches to the chest and gave tartar emetic freely, and the breathing, which grew less hurried and less oppressed, justified the wisdom of your treatment. But if the respiration again rise in frequency, and you, in order to reduce it, redouble the activity of your treatment, you may be disappointed in the effect that you hoped to attain; the respiration may grow more and more frequent, and the child before long die in convulsions. If in such a case you had examined the patient with due care, you would probably have discovered that the dyspnoea was not associated with increase of the heat of skin; you would have

learned that it had varied much within a few hours, sometimes subsiding and then returning without adequate cause; you would not have detected any deterioration in the results of auscultation, while you would probably have perceived in the half-closed eyes, or the thumbs drawn into the palms, signs of the disturbance of the nervous system.

This nervous dyspnoea sometimes occurs early in the disease, at a time when active treatment is evidently indicated; and while that plan is continued we shall best meet this symptom by applying a mustard-poultice to the chest, and by placing the child as high as the pelvis in a hot-bath. The evening attacks of dyspnoea are often more effectively controlled by this than by any other means. When these symptoms come on at a more advanced period of the disease, or in a child previously debilitated, they indicate that active treatment must no longer be persevered in. The antimony must be discontinued, or its dose greatly reduced, and the vinum ipecacuanhae, with small doses of nitrous ether and of the compound tincture of camphor, should now be given, or even small doses of the Dover's powder. The general restlessness will be much relieved by immersing the whole body in a warm-bath, which should not be employed at so high a temperature as when used for its counter-irritant action. At the same time attention must be paid to support the child's strength, by veal-broth, arrow-root, or other nutritious diet.

After the acute symptoms of bronchitis have been subdued, the subsequent convalescence of the patient is often protracted by the continuance of cough and wheezing respiration; symptoms which on a very slight cause are apt again to put on the more serious characters of the acute disease. In this chronic stage, a general tonic plan of treatment must be adopted, while at the same time much benefit will often be obtained by the employment of a stimulating liniment to the chest. The extract of bark is an extremely useful tonic, especially in cases where there exists any tendency to diarrhoea; while the wheezing is often relieved by the administration of an emetic of ipecacuanha every night. If the secretion in the bronchi be very abundant, the decoction of senega, with ammonia and tincture of squills, is often superior to any other medicine. If the bronchitis have supervened during dentition, you must not be surprised at slight relapses occurring just as each tooth approaches the gum. At other times, however, bronchitic symptoms continue for a long time, the expectoration being copious and puriform, while the child loses flesh, and the relations become not unnaturally apprehensive lest it should be phthisical. Their

fears may be well founded, but at the same time that you would recommend change of climate to some warmer country in the winter, or to the sea-coast during the summer, you would, as I shall hereafter point out to you when speaking of phthisis, be warranted in taking a much more favourable view of such cases in a child than in the adult.

The general principles on which you must treat the more grave attacks of capillary bronchitis have been laid down in what has been already said. A greater degree of activity in your treatment is needed; you may even deplete generally, and follow up this depletion by local bleeding, but the caution already given against the repeated abstraction of blood holds good here. With reference to antimony, too, it is while the emetic action of the remedy continues that you may hope for much from its employment; while you must be careful not to persevere in its use when the livid face and faltering pulse show that the aeration of the blood is nowhere duly carried on. A blister to the chest, and the stimulant expectorants, as ammonia and senega, may now be given, while the attempt may be made, by emetics of squills and ipecacuanha, to unload the bronchi at intervals of four or six hours. These are the cases, however, in which if you do not get the better of the disease at first, your subsequent remedies will probably be too tardy to overtake it.

QUESTIONS ADDRESSED TO MEDICAL OFFICERS OF POOR-LAW UNIONS.

THE Committee of Medical Officers of Poor-Law Unions has recently issued a circular containing the following questions, addressed to the medical officers throughout England and Wales. The filling up of these returns will greatly expedite the labours of the Association, and enable the Committee to apply with confidence to Parliament for an early consideration of the grievances of which the medical officers so justly complain.

State the district, population, union, acreage. 1. Year ending Lady-day 1843, 1844, 1845, 1846, 1847. 2. Total number of sick as per weekly return. 3. Number of sick attended but not included in weekly return. 4. Amount of annual salary, exclusive of extras. 5. Amount received for extras. 6. Payment for midwifery: *a*, rate per case; *b*, amount received. 7. What is your opinion as to the propriety of payment per case, and the amount? 8. What is your opinion as to a fixed salary, based on the number of cases attended, and the mileage? 9. What is your opinion as to payment for extra cases exclusively of midwifery? 10. What is your opinion as to fixed payment founded on the number of population and area, to be settled by the Poor-Law Commissioners?

ON
CHEMISTRY AND THE MICROSCOPE
IN RELATION TO
PRACTICAL MEDICINE.

By GEORGE E. DAY, M.A. & L. M. Cantab.

Member of the Royal College of Physicians,
Lecturer on Animal Chemistry and Histology
at the Middlesex Hospital School, and Physi-
cian to the Western General Dispensary.

LECTURE VII.

FATS.—*Their division into saponifiable and non-saponifiable.—General character of free or neutral fats.—Mode of distinguishing one from another.—Table of fusion-points of ordinary fatty matters.—Fatty acids—their general characters.—Soaps.*

Stearic acid.—Margaric acid.—Oleic acid. Butyric, caproic, caprylic, capric and vaccinic acids.—Phosphoglyceric acid. Glycerin.—Stearin.—Margarin.—Olein.

Non-saponifiable fats.—Cholesterin.—Redtenbacher's investigations on the products of its oxidation.—Serolin.

The formation of fat.—Starch the primary source of fat in plants.—Views of Liebig and Dumas regarding the formation of fat in the animal body.—Facts in favour of Liebig's view.—Mode in which the conversion of starch and sugar into fat occurs.—Effect of fatty food in the process of fattening.—Fat a product of the retrograde metamorphosis of the protein-compounds.

FATS.

UNDER the name of "fats" we include various non-nitrogenous compounds, which are insoluble in water, but soluble in hot alcohol and ether. It would be altogether out of place for me to enter into the general chemistry of the fats, in this course of lectures. I have only to call your attention to those points which bear on physiological and pathological investigations.

You are doubtless aware of the distinction that has been made between the *saponifiable* and the *non-saponifiable* fats. The former possess the property of being decomposed by strong bases, especially by the alkalies and by oxide of lead: in this case one of the two principal constituents (the fatty base) is separated, while the other (the fatty acid) combines with the new base, forming a soap with the alkalies, and a plaster with oxide of lead. Hence those fats which, on account of this property, are termed saponifiable, are composed of an acid and of a base; these acids and their bases being themselves

the oxides of compound radicals, probably hydrocarbons. The latter not being capable of decomposition in this manner, are termed non-saponifiable fats.

In the animal body the fats exist partly free and partly saponified. The latter, composed of a fatty acid and an alkaline base (potash, soda, or ammonia), occur chiefly in the fluids; while the former constitute the great bulk of fatty tumors, and of all solid fatty depositions.

The fats are remarkable for their large amount of carbon, and for the small quantity of oxygen they contain*.

With regard to their general chemical characters, it may be mentioned that the free fats—margarin, stearin, olein, &c. are soluble in ether and in boiling alcohol, form a greasy spot on paper, burn with a clear yellow, but, at the same time, smoky flame, and, as a general rule, have neither an acid nor an alkaline reaction. On allowing a hot saturated alcoholic solution to cool, some of them separate in to crystals, (see figs. 27, 28, and 30), from whose forms we are often enabled to draw correct conclusions regarding the kinds of fat that are present.

By prolonged ebullition with an alkali they are decomposed into their corresponding fatty acid, which unites with the alkali, and into glycerin, which acts the part of a base in the original fat.

It is very difficult (I doubt if it is always possible) to separate the different fats from one another when several of them are present. The nature of a single fat, or of a mixture of two fats, is best determined by observing the point of fusion or solidification. As Dr. Griffith, in his excellent little manual, has very clearly described the process to be followed in this case, I shall give it you in his words:—"The point of fusion or solidification, which is found to be tolerably constant in each, may be ascertained by taking a capillary tube; into this a small quantity of the substance is drawn by the mouth; the lower extremity of the tube is then sealed: if the fat be solid at ordinary temperatures, it must be previously fused. The sealed end of the tube is then immersed in water, in which an accurate thermometer is placed, and the temperature of the water must be either raised or lowered (by the addition of hot water, or the use of freezing mixtures) until that point is observed at which the fat becomes either solid or fused."

He gives the following table of the fusing and solidifying points of the most ordinary fatty matters:—

* A table, containing the results of the ultimate analyses of the fats and fatty acids, will be given in our next lecture.

Fats.	Fusing Point.	Solidifying Point.	Fatty Acids.	Fusing Point.	Solidifying Point.
Stearin . . .	143°		Stearic	158°	
Margarin . .	118°		Margaric	140°	
Olein . . .		Below 24°	Oleic		Below 32°
Butyrin . .		" 32°			
Cholesterin.	293°				

The *fatty acids* exhibit a pretty well-marked acid reaction, and may be precipitated from a warm alcoholic solution by numerous metallic salts. They never, as far as I know, occur free in the body, but are either combined with glycerin, forming the ordinary free fats, or are combined with potash or soda. They resemble the fats in communicating a greasy stain to paper, but differ from them in being more soluble in hot dilute alcohol. In consequence of this difference, we are enabled to separate the fats and the fatty acids when they occur together.

The *soaps* are for the most part soluble in hot water and in ether; they consist of the fatty acids combined with alkalies, and are decomposed by acids.

I think that for convenience sake we had better begin with the fatty acids, as without a clear and distinct knowledge of them it would be impossible to understand the chemical composition of the fats themselves.

Stearic acid is of rare occurrence in the human body. When obtained from mutton-suet, in which it exists in large quantity, it is inodorous, of a pearly-white colour, and soluble in boiling alcohol, from which it

becomes deposited, on cooling, in brilliant scales. Various formulæ have been given for its composition. The most correct probably is $C_{88}H_{188}O_7$, or $C_{88}H_{186}O_6 + HO$, as determined by Gottlieb.

It fuses at about 158°, being solid at an ordinary temperature. The appearance it presents when crystallized from an ethereal solution on cooling is given in fig. 25; and on referring to fig. 26, you can contrast its microscopic characters with those of margaric acid.

FIG. 25.

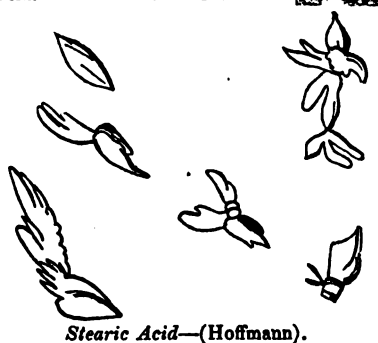


FIG. 26.



FIG. 26.—Crystals of Margaric and Stearic Acids, obtained from saponified mutton suet, and magnified 220 diameters.

a, Acicular crystals of margaric acid, which are exactly similar to those of margarin,

some isolated, others in tufted groups. *b*, Crystals of stearic acid resembling pointed ellipses (probably rhombic tablets with truncated angles). Care must be taken not to confound these with imperfectly-formed crystals of cholesterin. *c*, Groups of crystals of stearic acid, with needles of margaric acid scattered amongst them. *d*, Imperfect groups of stearic acid—(Vogel).

Margaric acid is solid and crystalline: it fuses at 140° ; it crystallises in tufted groups of needles in much the same form as the fat, *margarin*, from which its derived. By this means we may distinguish it from stearic acid or stearine; and when we speak of margarin we shall show how it may readily be distinguished from that substance. It is soluble in ether and in hot alcohol or spirit, but nearly insoluble in cold alcohol. Its formula is $C_{34}H_{70}O_2 + HO$.

Oleic acid presents the appearance of a pale yellow oil. Its formula is $C_{18}H_{34}O_2 + HO$. It is soluble in ether, and even in cold alcohol. Under the microscope it presents the common appearance of oil-globules, identical in all respects with those of olein or butyrin (see fig. 29).

Butyric acid, and its allied acids, must be noticed in this place, but a very brief notice will suffice for them.

From butter there may be obtained four volatile acids, which stand in a very simple relation to one another; namely—

Butyric acid, which $= C_4H_8O_2$
Caproic acid " $= C_6H_{12}O_2$
Caprylic acid " $= C_8H_{16}O_2$
 and *Capric acid* " $= C_{10}H_{20}O_2$.

In examining butter for these acids, it is sometimes found that no butyric or caproic acids are present, but that they are replaced by a new and distinct acid, to which the term *vaccinic acid* has been applied, and which seems to be equal to the sum of those two acids, minus one atom of oxygen, and is very readily decomposed into them.

Butyric acid possesses an unpleasant odour, which calls to mind at the same time that of acetic acid and that of rancid butter. It is a colourless oily fluid, readily soluble in water, alcohol, and ether. It evaporates easily in the open air, and distils without undergoing any perceptible alteration. Its taste is strongly acid and burning, and it attacks and disorganizes the skin in the same manner as the strongest acids.

MM. Pelouze and Gélis have recently shewn that, by a peculiar process of fermentation, butyric acid may be obtained from sugar.

Butyric acid is also one of the products of the decomposition of fibrin (Wurts), and of casein (Iljenko).

These facts are interesting in connection with the question regarding the formation

of fat,—a point to which we shall shortly return.

I need not detain you with any details regarding the acids allied to butyric acid: if you would seek for further information regarding them, I must refer you to my Introduction to Simon, or to the second volume of M. Millon's "Elements de Chimie Organique." Certain fatty acids, differing, however, from the preceding, in containing other ingredients besides carbon, hydrogen, and oxygen, occasionally fall within the notice of the animal chemist—as, for instance, cerebrie and oleo-phosphoric acids, which we shall briefly notice in connection with the chemical constitution of the brain; and phospho-glyceric acid, which has recently been found by M. Gobley in the yolk of egg, and which he presumes also to occur in the cerebral substance.

We are now in a position to enter on the consideration of the actual *fats*, which must, as I have already remarked, be regarded as combinations of the aforesaid acids with glycerin.

But I have not yet told you what *glycerin* is. Glycerin is separated from the fats by the act of saponification, while the fatty acid with which it was associated enters into combination with the new base. When properly prepared, it is a clear uncrystallizable fluid, of a yellowish colour, devoid of odour, of a marked sweet taste, very soluble in water and alcohol, but insoluble in ether. Its composition is expressed by the formula $C_3H_7O_2 + HO$.

Now *stearin* may be chemically regarded as a bistearate of glycerin: its formula is $C_{44}H_{88}O_{17}$. It occurs in large quantity in the fat of the sheep, but is usually not to be detected in normal human fat, where its place is supplied by margarin*. It is soluble in hot ether and alcohol, and separates as those fluids cool, but not in any marked crystalline form. It fuses at 143° . It may be detected by forming an alkaline stearate, and decomposing it with hydrochloric acid. On dissolving the precipitate in hot ether, we obtain, on cooling, the crystals of stearic acid which we have already described and depicted in Figs. 25 and 26.

Margarin, associated with more or less olein, forms the great bulk of human fat. It is a combination of margaric acid and glyceum, but its exact formula is uncertain. It melts at 118° . It is nearly as soluble in alcohol at the ordinary temperature as at the boiling point; and its solubility in ether is much greater than that of stearin. It dissolves freely in olein. I have endeavoured to give you an idea of the forms in which margarin crystallises, in figs. 27 and 28.

* Rokitsansky seems to think that, in certain morbid conditions, stearin may occur in the human body—(Patholog. Anat. vol. i. p. 284.)

FIG. 27.

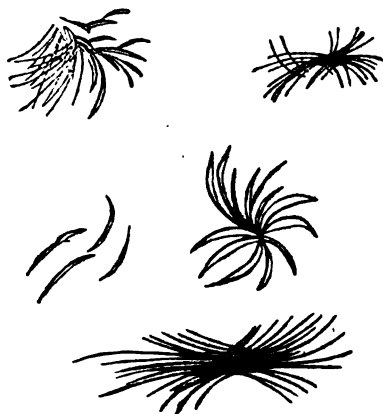


FIG. 27.—Margarin (from human fat) crystallised from cooling ether.—(Hoffmann.)

FIG. 28.



FIG. 28.—Margarin (from human fat) magnified 220 diameters. The crystals of margarin are generally united in groups, (a); we sometimes observe them laterally, when they present a hemispherical or sheaf-like form, (b). The large and more perfect crystals are needles or groups of needles, (c). The minute drops and granules are partly pure olein, and partly a mixture of olein and margarin. On allowing a hot saturated solution of human fat to cool, and examining the deposit under the microscope, we usually observe all the crystalline forms of margarin here depicted, together with drops of olein—(Vogel.)

Olein exists as a clear oleaginous fluid, and is the substance which forms the principal mass of the liquid fixed oils. It is

stated to vary in some respects, especially in regard to the point of fusion, in the fats of different animals. Chevreul describes the olein of human fat as a colourless oil devoid of odour and of a sweetish taste, and retaining its fluid state at 25°. 100 parts of boiling alcohol dissolve 123 of olein; when the solution cools to 170° it becomes turbid. It is readily soluble in ether, but perfectly insoluble in water. Its composition has been variously represented by different chemists.

The microscopic appearances are given in fig. 29.

FIG. 29.



FIG. 29.—Olein of human fat, magnified 220 diameters.

In a similar manner the remaining fatty acids combine with glycerin to form butyrin, &c.

There are certain fats, as I mentioned just now, that we term non-saponifiable fats. These we must now proceed to notice.

Cholesterin is the most important of them. It derives its name from being a fatty matter found in the bile, although, when that fluid is in a normal state, 1000 parts contain only about 0.5 of it. It exists in the blood, in nervous tissue, in the vernix caseosa, in atheromatous deposits, in dropsical effusions, in gall-stones (of which it is often the sole constituent), in various tumors, &c. It sometimes exists in a state of solution, but more commonly floats on the surface, either in the form of brilliant scales or of solid mass.

It has never been found in the vegetable kingdom, and hence we must regard it as formed within the organism. Mulder supposes that it may be produced by the deoxidation of margaric acid.

Its formula, according to the latest authorities, is $C_{28}H_{54}O$. When pure, it occurs in the form of nacreous, sparkling, transparent lamellae, lighter than water. It

is very soluble in boiling alcohol, and rather less so in ether; it also dissolves freely in soapy and fatty fluids.

From the peculiar form in which it crystallises it may be readily detected by the microscope.

FIG. 30.

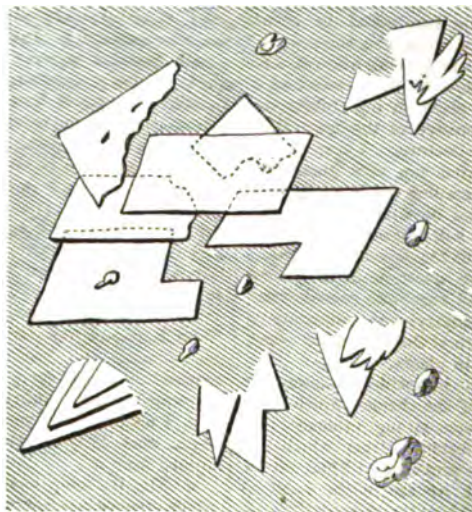


FIG. 30.—Crystals of cholesterin magnified 220 diameters. The perfect crystals form colourless rhomboidal plates, whose obtuse and acute angles are about 103° and 77° respectively. The irregular crystals at the lower edge of the figure are imperfect crystals, as they separate from a hot saturated alcoholic solution when allowed to cool rapidly—(Vogel.)

Alkaline solutions have no effect on cholesterin.

This substance has lately been made the subject of special investigation by several able chemists.

MM. Schwendler and Meissner have obtained a beautiful crystalline hydrate of cholesterin by the addition of a volume of alcohol to two volumes of an ethereal solution of that substance. The crystals are transparent, but become opaque after exposure to the air or to heat. Their formula is $(C_{28}H_{48}O)^2, 2H_2O$.

Redtenbacher has undertaken a series of researches with the view of obtaining a more accurate knowledge of the nature of cholesterin by studying the products of its decomposition, and he has arrived at the important result that, on acting on cholesterin with nitric acid (*i. e.* oxidizing it), he obtained the same results as when acting in a similar manner on the non-nitrogenous portion of the bile. On the application of a moderate heat to a retort containing cholesterin and nitric acid, the action soon becomes violent, and a resinous matter is formed,

which, however, dissolves in the acid. In the receiver was found (as in working on choloidic acid, a non-nitrogenous biliary product,) acetic acid, with traces of the volatile acids of butyric. The latter were formed in such minute quantity that he could only prove their presence by converting the acetic acid into acetic ether, which was always accompanied by the peculiar odour of butyric and caproic ether. The non-volatile products were also of precisely the same nature as those obtained from choloidic acid. Hence, as cholesterin and choloidic acid yield the same products of oxidation, he concludes that cholesterin is related to the non-nitrogenous portion of the bile, and not to the fats.

Serolin is a non-saponifiable body that has hitherto been found only in the blood. In order to obtain it, blood must be first evaporated to dryness on the water-bath, and the residue treated with water as long as anything continues to be taken up. It must be then dried, pulverised, treated with boiling alcohol, and filtered while hot. On cooling, the alcohol deposits this fat in floculi. It must be collected on a filter, and washed with cold alcohol. Boudet, its original discoverer, assigns the following characteristics to serolin. It forms flocks of a fatty nacreous appearance, is perfectly neutral, and melts at 97° . In water it is perfectly insoluble; in hot alcohol of $83\frac{1}{3}$, only slightly so; and separates on cooling into its original flocculent form, since cold alcohol exerts no solvent power over it. It dissolves readily in ether, and is not acted

on by alkaline solutions. It may be distinguished from cholesterin by its lower fusion-point, and from the true fats by its perfect insolubility in cold alcohol. Its composition is unknown.

There are certain fats stated to occur in the brain and nervous structures generally; they are of no general interest, and what little we know of them will find a more appropriate place in our future remarks on the chemistry of the brain, than in this morning's lecture. I fear that I have already wearied you with these dry chemical details regarding the fats. We now proceed to inquiries of a much more interesting nature, and will first notice the much-disputed question of the *formation of fat*.

To consider this question in its general bearings, we should turn our consideration to vegetable physiology, and endeavour to ascertain the nature of the process by which fats are produced in plants.

Although we are incapable of describing the exact nature of the changes which actually occur, we have strong evidence that starch is the substance from which the vegetable fats are produced. Thus, all the seeds from which we are in the habit of expressing oil,—the castor oil seed, linseed, &c.,—in their early stages contain starch, but this starch gradually decreases as the quantity of oil increases; and when the seed has attained its full development the whole of the starch is found to have disappeared. Hence it seems more than probable that either directly or indirectly the starch is converted into fatty matter.

If, then, starch can be converted into fat in the vegetable kingdom, is it not possible that a similar conversion may occur within the animal organism? This question has given rise to a long and somewhat intemperate controversy between the French and German chemists: Dumas maintaining that plants prepare fats for animals, and that animals cannot do this for themselves; in short, that all the fat which animals possess *originates* in plants: while Liebig, on the contrary, asserts that animals are able to produce fat in their own organisms. It would be impossible for me even to refer you to all memoirs published on the subject, and as I regard the fact that fat may be formed in the animal from starch and sugar as established beyond all doubt, I shall content myself with mentioning to you a few of the circumstances that have led physiologists and chemists to arrive at that conclusion.

a. The first, and one of the most striking facts bearing on this point, is one presented to our notice in a similar manner in both the vegetable and animal kingdoms.

A French chemist, M. Avequin,* has

described and analysed the wax obtained from the sugar-cane, and he mentions as a singular peculiarity of it, that such kinds of sugar-cane as contain much wax have but little sugar. This leads to the inference that one of these substances is formed from, or at the expense of the other, and as sugar is usually found at an earlier stage than fat, it might be fairly concluded that the sugar (a substance produced from the starch of the plant) had been converted into the wax.

It has, however, been shown by some excellent experiments of Gundlach,* that wax can be prepared by bees from sugar; he fed bees with a solution of sugar-candy in water, and saw them producing wax. Thus sugar may be converted into wax, that is to say, into a fatty substance, both by the sugar-cane and by bees.

b. It is stated on good authority that the West Indian negroes are remarkably fat and sleek during and just after the period of cutting the sugar-cane, when they always consume a great quantity of the juice.

c. I mentioned to you, when speaking of sugar, that butyric acid might be readily formed from it.

d. The fattening qualities of substances, which themselves contain little or no fat are well known. All farinaceous substances, such as rice, peas, beans, potatoes, and corn, are selected by preference for fattening animals, and Liebig has shewn that the amount of fat which is found on the fatted animal is very much more than can be accounted for by the mere fatty matter in the food. The following illustration, taken from experiments actually performed, will shew you this more forcibly.

In order to fatten three pigs in thirteen weeks, 1000 pounds of peas and 6825 pounds of boiled potatoes are requisite; the latter being equal to 1638 pounds of dry potatoes. Now the amount of fat in this food is twenty-six pounds; the peas contributing twenty-one, and the potatoes five pounds. One fatted pig gives on an average fifty-two pounds of fat, and the three pigs 156 pounds. Each pig before being fattened contained on an average eighteen pounds of fat, so that the three contained fifty-four pounds. If to these pre-existing fifty-four pounds of fat we add the twenty-six pounds existing in the food, we get eighty pounds; but the pigs have got 156 pounds between them. Hence it obviously follows, that the difference which amounts to seventy-six pounds must have been produced from the starch, &c. of the food.

We shall incidentally return to this subject in the lecture on milk, when we shall point out how the character of the food modifies the composition of that fluid.

e. In the same way, the influence of ale in

* Ann. de Chim. et de Phys., Oct. 1840.

* Naturgeschichte der Bienen, Cassel, 1842.

producing obesity is well known; yet ale contains only a very minute trace of fatty matter.

f. It is stated by Dr. Gregory, on the authority of Dr. Webster, of Harvard University, that maize, which is free from oil, is found quite as effectual in fattening animals as that in which oil occurs.

With regard to the manner in which the conversion of starch or (since starch can only be assimilated in the form of sugar) of sugar into fat takes place in the animal body, "it is certain," says Liebig,* "that it only takes place in consequence of the simultaneous occurrence of the two processes of fermentation and decay or *eremacausis*." In other words, the conversion of a substance such as oxygen into another containing less oxygen, is determined by the splitting up, as it were, of the sugar into two compounds, one of which contains the oxygen which the other has lost, and consequently contains an excess of that element when compared with the sugar.

The oxygen in the process of decay combines with the hydrogen of the substance, and the highly oxidised compounds given out during fermentation are carbonic acid and water. According to this view, the conversion of sugar into fat is effected by the oxidation of its hydrogen, and by the separation of a certain proportion of its oxygen in the forms of carbonic acid and water.

Although Liebig strongly maintains that fat is thus formed in the animal body, he also fully grants that the fat which animals take in their food contributes to increase the quantity of fat in their bodies. Of this (he observes) we have certain and decisive proof in the pathological effects produced in persons who daily take a considerable quantity of cod-liver oil.

There is yet another source of fat, to which no English writer, with the exception of Mr. Paget, seems to have alluded: I refer to the formation of fat from the protein-compounds.

From certain experiments made by Persoz on the fattening of geese with maize, he was led to conclude that they not only assimilate all the oily matters of the maize, and transform some of its starch and saccharine matter, but also transform a certain portion of their own tissues into fat. During the fattening the blood becomes highly charged with oily matter, and much of its albumen disappears or is transformed.

But time warns me that I have already exceeded my allotted hour; I must therefore postpone to our next meeting the consideration of this subject.

* *Animal Chemistry*, 3d ed., p. 113.

Original Communications.

REMARKS

UPON THE

CONTINUED FEVER

AT PRESENT EXISTING IN THE SOUTHERN DISTRICTS OF THE METROPOLIS.

Read at the Physical Society of Guy's, Oct. 13th, 1847,

By H. M. HUGHES, M.D.,
Assistant-Physician to the Hospital.

(Concluded from p. 929.)

I now propose very briefly to point out the circumstances which have appeared to me to constitute the most striking differences between the present and the late epidemic fever.

1. *Cerebral congestion or irritation.*—In the preceding epidemic almost all the patients were troubled with oppression of the brain and confusion of intellect, and a large proportion of them with wandering delirium. It was in consequence the almost universal practice to shave the head and apply cold. During the existing disorder, on the contrary, in one only of my patients has there been, or appeared to be, any necessity for shaving the scalp; in two only, that I have heard of, has there been any delirium; and in a few only has cold been applied to the head.

Pain has, indeed, been complained of in the head in many instances, but it has usually been comparatively slight: it has generally occurred in the early stages of the complaint, and, as I have believed, has existed only to the same degree as in any other common febrile attack. Pain, in fact, has affected the head no more than the limbs, or other parts of the body. When, as in some few cases, it has been a source of annoyance in the later stages of the complaint, it has seemed to proceed from mental anxiety, or from debility, and perhaps from the opium administered to check the diarrhoea, and to have disappeared without any remedies being especially thereto directed.

In the same connection may be mentioned the expression of countenance, which in the two epidemics varied considerably. In the one case it was dull, heavy, stupid, and dreamy; in the other it was ordinarily languid, anxious, and exhausted.

2. *Macula*.—As it has been more than once before stated, these spots were, in the previous malady, almost universal; while in the reigning disorder out of thirty-eight cases they have been observed only in one instance.

3. *The state of the pulse*.—Excepting in the case of some more than ordinarily grave affection of the brain—as effusion, or that arising from the urine being suppressed or retained—the pulse, in the fever prevalent for several years in this metropolis, was frequent throughout the entire course of the disorder. In the fever now present, on the contrary, the pulse, though as high as 100 on one day, has often on the next day been reduced to 80, or even 75. This change in the number of the pulse has occurred not only without the super-vention of any grave symptoms affecting the brain, or other organs, but has coincided with a general amelioration of all the febrile symptoms. This quiet state of the pulse has moreover continued for several days, and in many instances throughout the entire future progress of the complaint, or, as it should, perhaps, be said, during whole convalescence. It has appeared, if we may trust the accounts given of the preceding history by the patients or their friends, as early as the sixth, seventh, and eighth day of the malady; and, in some few instances, has been present on the day after the admission of the patients into the hospital. It need scarcely be stated that during relapses the pulse has been quickened, but it has been again reduced to, or perhaps even below, the natural standard in the course of a very few days, when the renewed febrile excitement has ceased, whether that cessation were or were not preceded by profuse diaphoresis.

4. *The state of the skin*.—In the fever existing from ten up to three years ago, the skin was almost uniformly dry up to the fourteenth day of the disorder at the least, and frequently for a much longer time. It, in fact, rarely became moist till the patient became convalescent. In the present fever, on the contrary, the skin has been soft, and in many cases moist, almost from the beginning of the disorder, and perhaps even from the very beginning. I have seen patients perspiring freely upon the very day of their admission, though this, it is true,

may have been several days after the primary attack. The *moisture* of the skin has not been intermittent, but continued, and has, in not a few instances, coexisted with great febrile excitement. Though, as regards the state of the skin, as well as in some other respects, the fever has approached in character to the intermittent or remittent form, yet I have never been able to recognise any regular intermission, or, indeed, any regular remission, during its progress: in other words, I have not been able to discover any decided periodicity in the disorder. This is the more remarkable both as regards what was really present as well as what I believe to have been really absent, seeing that ague was this year, and at a much earlier period of the year than usual, very prevalent in the eastern and south-eastern portions of the metropolis—in Rotherhithe, Camberwell, and Deptford, but particularly in Woolwich and Plumstead.

Independently of this generally moist state of the skin, there has existed, as has been before observed, in a considerable proportion of the cases, *i. e.* in 9 out of 38, a very profuse diaphoresis, which appeared at an indefinite period of the malady, and lasted less than twenty-four hours, but was perfectly critical—and critical both as to the fever itself, and as to the sometimes very grave local inflammatory affection which accompanied it. Such profuse and critical diaphoresis was, I believe, unknown, and was certainly very rare during the late epidemic.

5. *Proneness to relapse*.—Relapses in the old fever were unfrequent, and, when they did occur, they were usually traceable to some definite exciting cause. In the new fever relapses have occurred in twelve cases out of thirty-eight, under my own observation, and it is not, I think, improbable that they have also occurred in others of the patients who left the hospital earlier than it was, under the peculiar circumstances of the case, desirable. In no single instance were we able to connect the relapse with any obvious existing cause.

6. *Tolerance of wine, opium, and quinine*.—The difference in this respect between the two diseases may be perhaps regarded as the natural result of the differences to which allusion has been already made. It may, notwith-

standing, be observed, in confirmation of the preceding statements, that in the late epidemic, wine was sometimes not well borne by the patient—that opium was rarely prescribed, and quinine scarcely ever; while in the existing epidemic, wine (excepting during some of the inflammatory affections accompanying the relapses) has been uniformly well borne by the patient, and opium and quinine have been frequently prescribed with the best effects.

Without again referring to the duration of the disease, either as to an average of the whole number, or as to individual cases, which may perhaps in the minds of some admit of doubt, enough has, I think, been said to show that the fever has differed very remarkably in the two periods to which I have referred, and to confirm the opinion of the illustrious father of English practical medicine, as to the striking dissimilarity of the same disease in different "epidemic constitutions."

In conclusion, I may observe that I have myself little doubt that the fever, as an epidemic, or perhaps rather an endemic affection, has been imported from Ireland. It is true that some few cases occurred, of a somewhat similar but mixed character, before the large immigration of Irish in the early part of the late summer; but they were, as I have before stated, few, single, and sporadic. The importation of the poor Irish into Liverpool and Canada, and their extension to Leeds and other places, appears undoubtedly to have been followed by the occurrence and wide diffusion of fever in those places. I cannot but believe that similar consequences have followed similar causes in London also, and I do so for the following reasons:—

1. Fever was rare in the hospital before the immigration of the Irish into London. Since they arrived the applications for admission into the hospital have been exceedingly numerous, and the number of patients actually admitted for fever have been larger *than it has been for the last eighteen or twenty years, and, I am authorized to say, even for the last fifty years.*

2. The *early* cases occurred almost exclusively among the Irish: out of thirty-eight patients suffering from fever in the hospital at one time, thirty-six were Irish. Among my own

cases, it is true that the proportion has not been nearly so large. Of the thirty-eight cases, twenty-four were Irish and fourteen English; but dividing the numbers into equal halves, according to the dates of their admission, it has been found that, while of the latter half nine were English, and ten were Irish, of the former half fourteen were Irish and five only were English.

3. Many of the patients had only just arrived from Ireland: several among my out-patients, who are not referred to in this paper, and are not included in the following table, said that they were attacked upon the very day of their landing. One lad taken into the hospital had landed in London only a week from the time of his admission; he acknowledged that, in his native land, he had never been encumbered with any extraneous appendages to his lower extremities; the awkwardness of his gait under the additional weight of his well-patched high-lows, while proudly exulting in an old suit of corduroys, evidently a recent acquisition, and made for one much his senior, sufficiently attested that he had not been long in England.

4. The fever at first existed among the very lowest orders, and always, as far as I was able to ascertain, emanated from districts—courts and alleys—densely populated with Irish. No private practitioners, of whom I inquired, had in the early part of the summer seen a single example of the disease: the parish-doctor and the dispensary and hospital-physician had alone come in contact with the malady. At a later period the disease unfortunately extended to others, and fever has of late been more common in private practice and among a better class of persons.

From these facts I am induced to believe that the existing fever, as an epidemic or endemic affection, was imported from Ireland, and that, from the lower class of Irish, it has been gradually communicated to the English residents of this district. From what I have observed, also, I cannot but believe that it has extended widely among the Irish, not so much from the want of food (for few of the patients admitted or seen in an early stage of the disease appeared to be badly nourished) as from the habit of crowding

No.	Name.	Age.	Country.	Probable duration of complaint before admission.	Complications.	Treatment.	Relapse and period after attack.	Complication of relapse.	Treatment of relapse.	Critical discharge.	Entire stay in hospital.	Result.
1	Thos. O'Brien	.	Irish	(?)	Pleuritis and congestive pneumonia	Cupping, salines, anti-mony, and blisters	.	.	.	.	About 2 wks.	Cure.
2	Hannah Collins	7	Irish	(?)	.	Serpetary and salines	.	.	.	.	2 wks.	Cure.
3	C. Collins	4	Irish	(?)	.	Saline mixture	.	.	.	Profuse persp.	2 wks.	Cure.
4	M. McCarthy	27	Irish	1 wk.	.	Soda and mint julep	15 days	.	Ol. Ricini	Profuse persp.	18 dys.	Cure.
5	Cath. Mahony	20	Irish	1 wk.	Bowel irritat.	Chalk mixture and opiate enemata	16 days	Peritonitis & vomiting,	Opium, blisters, brandy, & soda water.	Profuse persp.	6 wks.	Cure.
							24 days	cyanche tonsillaris	Quinine, garga, & wine	.	.	.
6	Johan. Connor	12	Irish	2 wks.	Pneumonia	Serpetary and salines, James' powder, Dover's powder, calomel, blisters	.	.	.	.	3 wks.	Cure.
7	George Batt	23	Eng.	4 dys.	.	Salines and Tr. Calumbe	14 days	Vomiting	Effer. mixture and blister	.	1 mth.	Cure.
8	James Field	10	Eng.	2 wks.	Bowel irritat.	Mist. Kramerias c.	.	.	Hydr. Chlor.	.	2 wks.	Cure.
9	C. Driscoll	50	Irish	5 days	.	Quinine, &c.	12 days	Icterus	Ant. Dover's powd. & Salin.	Profuse persp.	5 wks.	Cure.
10	Michael Neal	5	Irish	1 wk.	Bowel irritat.	Salines, mist cretae	.	.	.	.	1 mth.	Cure.
11	Dennis Sullivan	13	Irish	3 wks.	.	Serpetary and ammonia	1 month	Endocardii.	Leeches, Cal. Ant. & Opium with Salines	Profuse persp.	1 mth.	Cure.
12	Daniel Donovan	12	Irish	2 wks.	Macule and cereb. cong.	Serpetary and ammonia, cold to head, aperients	.	.	.	Profuse persp.	3 wks.	Cure.
13	Jerry Collins	20	Irish	2 wks.	Bowel irritat.	Serpet. ammo. co. chalk powd. & opiat. enem. wine	.	.	.	.	1 mth.	Cure.
14	Michel Hayes	22	Irish	4 days	.	Salines and serpentary	.	.	.	.	10 dys.	Cure.
15	Thomas Maclay	18	Irish	.	Bowel irritat.	Opiate enem., mist. cretae, and serpentary	.	.	.	.	10 dys.	Cure.
16	John Price	24	Eng.	4 days	Bowel irritat.	Idem. idem. beef-tea and wine	12 days	Bowel irri.	.	.	4 wks.	Cure.
17	Anne Hallaway	28	Eng.	5 days	very severe Slight bowel affection	Mist. cretae, opiate, enemata	10 days	Vomiting	Blister	.	3 wks.	Cure.
18	T. Bradley	14	Irish	6 days	.	Serpetary and ammonia	.	.	.	.	12 dys.	Cure.

Went out spontaneously.

No.	Name	Eng.	Days	Symptoms	Treatment	Duration	Complications	Medication	Profuse pers.	Time	Result
19	William Connor	Eng.	5 days	Bowel Irritat.	Serptary and ammonia	16 days				3 wks.	Cure.
20	Michael Clarke	Irish	5 days		Soda and mint julep			Efferves. Mirt.		4 wks.	Cure.
21	Hannah Nolan	Irish	5 days		Soda and mint julep, quinine and roses					2 wks.	Cure
22	James Bursen	Eng.	4 days	Bowel Irritat.	Mist crete; starch injections with syrup of poppies	14 days	Bwl. Irritation	The same as before—bark and ammonia	Profuse pers.	3 wks.	Cure
23	Wm. Ryan	Irish	9 days		Soda and mint julep and quinine					24 dys.	Cure
24	Tim. Harrogon	Irish	15 days		Serptary and ammonia wine	Had a fit approaching plexy				12 hrs.	Death; no examination
25	John Ryder	Eng.	8 days	Bowel Irritat.	Wine, ammonia, and syrup of poppies injection					72 hrs.	Death; examined
26	C. McCarthy	Irish	6 days	Tympanitis	Serptary, ammonia, and co. chalk powder	10 days				1 mth.	Cure
27	T. Donovan	Irish	2 wks.		Soda and mint julep and quinine				Profuse pers.	17 dys.	Cure
28	Hannah Forley	Irish	3 days		Id. id.					2 wks.	Cure
29	Anne Barrett	Irish	3 days		Soda and mint julep					1 day	Cure
30	G. H. Checquer	Eng.	12 days	Bowel Irritat.	Mist. crete and opiate enemata					15 dys.	Cure
31	Ellen Carney	Irish	3 days	Bowel Irritat.	Ammon., chalk, & opium; syr. of poppies injection; wine	18 days	Pleuritis, peritonitis, perforation?	Leeches, Hydr. c. creta and opium		3 wks.	Death; no examination
32	M. Williams	Eng.	7 days	Vomiting	Serptary and ammonia; blister and wine					2 wks.	Cure
33	C. Russell	Eng.	9 days	Severe bowel irritation	Serpen. co. chalk powder; extr. log wood & opium; wine, & opiate enemata				Profuse pers.	4 wks.	Cure
34	Eliz. Parry	Eng.	2 wks.	Vomiting and bwl. irritation	Serpen. & co., mist. kramerie, wine, opiate enem.					4 wks.	Cure
35	Eliza Day	Eng.	6 days.		Quinine, serpen. & ammon.					2 wks.	Cure
36	James Hurley	Irish	2 wks.		Serptary and ammonia					11 dys.	Cure
37	David Copper	Eng.	10 day	Bowel Irritat.	Serpen. ammonia, co. chalk powder, opiate enem., & wine $\frac{3}{4}$ i. from admission					18 dys.	Cure
38	John Poole	Eng.	3 days		Mint and soda	18 days				14 dys.	Cure

together in small rooms in the densely populated houses of courts and alleys, and particularly from the extremely dirty and careless habits of many of the sufferers. Famine has, I believe, had less influence in its production or dissemination than filth; and the loss of the potatoes less than the want of water upon the person and pure air in the dwelling.

P.S.—Nov. 6th.—From what occurred at the discussion of the preceding paper, I am induced to believe that the instances of maculated fever may, perhaps, have been more numerous than my own experience had induced me to believe. The disease in such cases has more nearly assimilated, if it has not exactly resembled, that occurring in the former epidemic. It has been, indeed, an entirely different disorder, accompanied with cerebral disturbance, a dry skin, and a frequent pulse, as well as maculae. I think also that in the vast majority of instances it has existed in persons of a better class, and of different habits. A gentleman, on the contrary, who is engaged as surgeon to a union-house, informed me, after the meeting, that he had seen a large number (perhaps nearly a hundred) of cases in the workhouse in his neighbourhood; that almost all of them had a moist skin, and were free from maculae, and that the disease was almost uniformly mild, and such as I have represented it to have been in the hospital. It appears therefore evident that two distinct fevers exist in this vicinity: one resembling the epidemic formerly existing, and affecting persons somewhat removed from abject poverty; the other, occurring among the poor, and principally Irish, presenting features strikingly different from those of the other, and in many respects affording reason for the belief that it may have in its origin some direct or indirect connection with miasm. Whether the one may degenerate into the other,—whether a person affected with the milder form (which is, I think, evidently infectious, as well as epidemic) is capable of communicating the more grave form to another individual,—I am unable to decide, as I at present possess no evidence upon the subject.

CASE OF SARCOMATOUS TUMOR OF THE NECK.

By HENRY SMITH, Esq.

Late House-Surgeon to King's College Hospital.

THE following case of simple sarcomatous tumor of the neck, causing death by gradual starvation, will perhaps prove interesting to the readers of your journal. It occurred in the practice of my friend Mr. Goolden, of Maidenhead, through whose kindness I had the opportunity of seeing the patient, and examining the case after death.

John Jacobs, *ætat.* 30, a groom, applied to Mr. Goolden, in December 1846, with a swelling on the right side of the neck, just below the ramus of the lower jaw. It was as large as a duck's-egg, hard, and not painful. Some time ago an abscess had formed near the same spot, and had been opened; the cicatrix of which was still visible. His health was good. Iodine was applied to the tumor in the form of ointment and tincture, and alternative doses of mercury were given; in a short time the tumor decreased in size, not being then bigger than a nut. He was discharged as cured.

At the end of April in the present year, he again applied to Mr. Goolden. The swelling had reappeared, and increased rather rapidly to a size greater than it had before attained. It was now as large as the first, not painful, but hard and circumscribed. Iodine both externally and internally was again used, but no benefit arose. The swelling went on slowly increasing.

In July he was sent to King's College Hospital, and placed under the care of Mr. Fergusson. The tumor at this time was as big as the two fists, hard and circumscribed, not at all painful; and, from its immobility, evidently strongly adherent to the neighbouring textures. Mr. Fergusson considered it to be of a simple nature, but did not think fit to attempt its removal, although the mass was beginning to interfere with the functions of breathing and swallowing. Remedies for the purpose of dispersing the tumor were used in vain, and, after remaining in the hospital a few weeks, he was discharged.

He returned to his home, and was again attended by Mr. Goolden. The tumor now was of larger size than it ever had been, and his health, which hitherto was pretty good, began to suffer, and the difficulty of swallowing and breathing gradually got worse, until he was obliged to keep to his bed entirely.

On the 21st of October I saw him with Mr. Goolden. An immense tumor occupies the right side of the neck and face, causing great distortion. It extends from the mastoid process (pushing the ear upwards) to the outer half of the clavicle, behind; then, rising over the jaw as high as the malar bone, it extends beyond the median line of the chin forwards and downwards as far as the sternum. The larynx and trachea are pushed considerably over to the left side, forming there a considerable prominence. The skin covering the mass is very red; the tumor itself is hard and immovable, although to the eye it appears as though it contained matter: a most careful examination by the finger cannot detect the slightest fluctuation. He can hardly separate his jaws to any extent; cannot swallow fluids even without the greatest distress, and he has been chiefly nourished by enemata. He suffers severe attacks of dyspnoea, and, if he attempts to sleep, a sense of suffocation and sinking comes on, by which he is denied the only consolation in his extremity. Opiates give him no relief, but make his head bad. The veins of the chest and right temple are much congested. I must not forget to state that he suffers no pain in the diseased part itself. The right upper extremity is paralysed, as regards motion, but occasionally it is affected with severe pains.

Oct. 26th.—We saw him again today. A remarkable change had taken place since the period of our last visit. According to his wife's account, he had become much worse the day before: he had profuse cold perspirations, and spat up a quantity of "nasty stuff;" the tumor had then suddenly decreased in size: instead of being hard and tense, it was soft and pliable. His constitutional symptoms are much worse, his face is pale and haggard, and his pulse is very quick and weak.

In the evening we again went to notice the progress of this most in-

teresting case, and to devise, if possible, anything to prolong the sufferer's life. We found him in much the same condition, but very low. The tumor had still further diminished in size, and he can open his mouth so as to allow us to look into the fauces. There is a prominent swelling, red, and having a small ulcerated opening blocking up the isthmus faucium on the right side. He has spat up more bloody fluid, but no pus can be detected. As we thought that the swelling just mentioned might be aggravating the distressing symptoms (namely, the dyspnoea and difficulty of swallowing), and that there might be matter pent up there, we deliberated on the propriety of making a free incision into the part; but he was in such an exhausted condition, and the least irritation about the throat caused such terribly distressing symptoms, that we determined to wait until morning, in the meantime endeavouring to support his strength by enemata of beef-tea and broth. We expressed our fears, however, to his friends that he would soon sink.

Oct. 27th.—We were in time to see him alive. He has slept heavily during the night; is nearly insensible; the tumor has subsided five inches in circumference during the last two days. He died quietly about 11 A.M.

Post-mortem examination, 24 hours after death.—Through the kindness of Mr. Goolden, I was permitted the opportunity of dissecting out the tumor, —a tedious and difficult task.

I made an incision along the inner side of the tumor, from the chin to the upper part of the sternum; another incision beginning behind at the mastoid process, and carried over the jaw, met the upper extremity of this; and another made over the clavicle was connected with its lower extremity. The superficial tissues, which were very dense, and intimately adherent to the tumor, were then dissected back, and the external surface of the mass exposed. The sterno-mastoid muscle was seen tightly stretched over the tumor, and some of its fibres closely attached to it. The muscles attached to the inner side of the jaw were then divided, and the tongue drawn forward. The knife was then carried back as far as the spine, and the oesophagus detached: this was quite flattened. That portion of the tumor about the articu-

lation of the jaw and styloid process was then with difficulty separated: lower down, the posterior part of the mass was intimately connected with the transverse processes of the vertebral column. The trachea and œsophagus were then separated from the soft parts on the left side, then divided just below their entrance into the thorax, and with them the whole taken away. I must add that the lower portion of the tumor extended below the clavicle, and pressed upon some of the nerves in that neighbourhood.

It weighed two pounds and a quarter: it was of a solid consistence, and presented the appearance of simple sarcoma. The arteria innominata entered it at its lower border, and then immediately divided into its two branches; and on laying open the tumor, the carotid artery, thickened and enlarged, was seen coursing right through its substance: the trachea and œsophagus were closely adherent to it. In that portion of the swelling which was blocking up the right side of the fauces, there were two or three small openings, but no cavity could be found. Here and there distributed through the mass were portions of scrofulous matter the size of a nut.

Remarks.—This case is interesting both from its rarity, from the peculiarity of symptoms during life, and the manner in which it proved fatal. The neck is frequently the seat of tumors both malignant and non-malignant, and these often attain a large size. The majority, however, of morbid growths in this situation are non-malignant; and although they sometimes occasion uneasiness and deformity, a fatal result is rarely caused by them, as in this case. Mr. Fergusson tells me that he has seen two or three cases of tumors similar in nature to this: in one, death was produced in the same manner by the mechanical effect exerted on the breathing and swallowing apparatus,—the tumor having existed eighteen months. In the extraordinary case of Mr. Goodlad, reported in the seventh volume of the *Medico-Chirurgical Transactions*, there was no malignity in the tumor; and had it not been extirpated by the knife, it probably would have destroyed life by pressing on the œsophagus and trachea.

Enlargement of the glands about the jaw, of the thyroid body, and encysted tumors in the same, are the morbid growths most frequently met with in this part of the body; these, although obstinate in their character, are generally harmless, and may be got rid of after a longer or shorter period by the use of appropriate remedies, or they remain stationary.

The morbid growths which mostly prove fatal are cancerous enlargement of the thyroid gland, scirrhus of the parotid, and malignant disease of the submaxillary. These cause death partly by their mechanical effects, but chiefly through the constitutional mischief always accompanying malignant disease. Occasionally, however, tumors are found in the neck, having nothing malignant in their character, and producing scarcely any constitutional disturbance; defying, nevertheless, all means employed for their cure, and ultimately causing death in consequence of pressure upon important parts in the neighbourhood.

In consequence of the rapidity of its growth, its firm adherence to the skin and textures around, and its appearance when cut into after death, there were some suspicions that this tumor was of a malignant nature; and a gentleman well acquainted with the peculiarities of morbid structure expressed his opinion to me that it was so, but an examination by the microscope showed that it was of a simple nature: moreover the little constitutional disturbance it produced, the non-existence of pain at any time, and above all the circumstance of its having once almost totally disappeared under the use of remedies, would be conclusive evidence of its non-malignity.

As regards the symptoms produced by the disease, they were what we should expect to see in such a case; but one thing was remarkable, and has not yet satisfactorily explained itself to my mind,—I mean the sudden and great decrease in the size of the tumor shortly before death. It is probable that suppuration had been slowly going on in its substance, and that a discharge of matter had taken place at the time the tumor was first noticed to decrease in size. He had spat up a quantity of "nasty stuff," according to his wife's account. After death I could find no

cavity in the tumor, and only two or three small openings in that part which was blocking up the isthmus of the fauces.

Death was mainly owing to starvation: we have seen that he had been unable to swallow any solids for weeks, and that latterly the least attempt to take fluids even were accompanied with the most distressing symptoms. Thus he was for some time chiefly nourished by injections. The difficulty of breathing, although great at times, was not so marked as the difficulty in swallowing, and this was explained when the parts were examined after death; for the larynx and trachea, although intimately connected with the mass, were not so much pressed upon, but were pushed on one side and forwards; whilst the œsophagus was more compressed by the posterior part of the tumor, which was closely attached to the spine, and, as I have before said, quite flattened against that structure.

It may, perhaps, be asked by some, why was not an attempt to remove the tumor at an earlier period made, inasmuch as it was considered to be non-malignant, and life would evidently be destroyed by the mechanical effects exerted on the trachea and œsophagus? At the period he was sent up to King's College Hospital, it was thought by one surgeon who saw it to be a fit case for removal; but Mr. Fergusson (who, I am sure, would not shrink from any operation which would give his patient any chance of life, whatever difficulties it might present) found, on a careful examination, the tumor so deeply seated, and so firmly adherent to the important textures in the neighbourhood, that, independently of the great bleeding which would take place, he considered it would not be justifiable to attempt it. The correctness of this opinion was shewn after death. The firm adherence of the tumor to the larynx and œsophagus, its extension behind the jaw, and deep attachments to the base of the skull and spine, are sufficient proofs of the impracticability of an operation. Moreover, the innominate entered the tumor, and the carotid artery coursed upwards right through its centre. Those who have seen tumors removed from the neck must know what a large amount of bleeding takes place in such operations,

even when no important vessels are wounded. I recollect once assisting a surgeon who is not easily frightened by blood, nor in the habit of giving up operations when he once begins them, in removing a tumor, about the size of the two fists, from the thyroid body, but, on the first strokes of the knife, the bleeding was so profuse, although no particular vessel was wounded, that he was obliged to abandon it. What a frightful hæmorrhage would have taken place in this case, had an attempt at removing it with the knife been made! It is true that tumors as large, and even larger than this, and in the same situation, have been removed by some surgeons possessing more boldness than discretion; but the accounts of the operations are enough to make one shudder, even when we know that they were attended with success, without picturing to our minds those more formidable occurrences which every one acquainted with the history of surgery knows to have taken place more than once when the removal of large tumors from the neck has been attempted.

13, Caroline Street, Bedford Square.

ON THE
PHYSIOLOGICAL PROPERTIES
OF
CHLOROFORM.

By R. M. GLOVER, M.D.

Lecturer on Materia Medica in the Newcastle-on-Tyne Medical School.

PROFESSOR SIMPSON, in the paper which he has recently published on Chloroform, speaks as if no one had an idea of the physiological properties of this substance before his time. Undoubtedly he has the sole merit of having proposed it as a substitute for ether in surgical operations.* But in the number of the Edinburgh Medical and Surgical Journal for October, 1842, there is published the second part of a paper of mine, on Bromine and its Compounds, and the analogies which exist between the physiological properties of these bodies and those of the corresponding compounds of chlorine and iodine; and at page 353 of this number, a chapter of the paper is headed "Physiological Properties of

* It was first used by Mr Bell. See Pharmaceutical Journal, Feb. 1847, page 337.—Ed. G. & A.

the Bromide and Chloride of Olefant Gas, of Bromoform, Chloroform, and Iodoform."

This chapter commences as follows:—"The only experiment on an animal with any of this class of bodies, is one related by Dr. Cogswell with iodoform, which he terms sesquiodide of carbon, but which we now know to be a compound of three atoms of iodine with one of formyl. The curious results of this experiment led me to investigate this class of bodies, which, from the results of my experiments, appear to form a new class of poisons, and to be possessed of properties not unlikely to be useful in the treatment of disease."

I then proceed to state that after showing the remarkable resemblance in leading physiological characters among the members of the group, I shall take chloroform in more minute experiments as an example of the rest. I then detail the results of an extensive series of experiments with these bodies, and especially with chloroform. I introduced them into the jugular, carotid, stomach, and peritoneum of animals, and used the hæmadynamometer in order to investigate the extraordinary power of congesting the lung which they possess when injected into the jugular (see cap. 61st, p. 356.) This power was not confined to them when administered in this way only. The congestion of the lung, produced by injecting chloroform or others of the class into the jugular vein, was enormous; in some instances the whole lung was like one vast apoplectic spot. I observed that these bodies produced great stupor and even profound coma before death, that they exerted a peculiar corrosive action when introduced into the stomach, and in some of the experiments noted that during the action of the poison the animals were insensible to pain. (See especially Exp. 64th.) I also state in summing up, amongst other general conclusions,—“the action on the spinal cord is very different from that of strychnia, to which my friend Dr. Cogswell compared it in the case of iodoform. Strychnia destroys the influence of the will over the muscles, but appears to excite the spinal cord, which loses its sensibility under the action of this class of poisons.” (p. 358.) I remark also the singular facility of absorption, or mechanical penetration,

through the tissues possessed by these bodies.

When the application of ether and of *chloric ether* to anæsthetic purposes became known, I remarked to several of my friends, that without doubt all the class of bodies on which I had formerly experimented, would possess similar properties, but was deterred, from the fear of their formidable power of congesting the lung, from giving them in practice.

In conclusion, either the action of chloroform when inhaled must be very different from its action when administered in other ways, or animals must be more susceptible of it than man. Perhaps habituation to alcohol may protect us somewhat: the use of chloroform in some habits and cases must, however, be attended with danger from its immense power of congesting the lung.

Your obedient servant,
R. M. GLOVER.

Newcastle-upon-Tyne, Nov. 24, 1847.

ROYAL SOCIETY.

At the Anniversary meeting of the Royal Society, held on Tuesday last, the following noblemen and gentlemen were elected office-bearers for the ensuing year.

PRESIDENT: The Marquis of Northampton.—TREASURER: George Rennie, Esq.—SECRETARIES: Peter Mark Roget, M.D.; Samuel Hunter Christie, Esq., M.A.—FOREIGN SECRETARY: Lieut.-Col. Edward Sabine, R.A.—OTHER MEMBERS OF THE COUNCIL: Thomas Bell, Esq.; Robert Brown, Esq., D.C.L.; Sir James Clark, Bart., M.D.; Samuel Cooper, Esq.; Sir Henry De la Beche; Edward Forbes, Esq.; John P. Gassiot, Esq.; Thomas Graham, Esq., M.A.; John Thomas Graves, Esq., M.A.; Sir John F. W. Herschel, Bart., M.A.; William Hopkins, Esq., M.A.; Sir Robert H. Inglis, Bart., LL.D.; Charles Lyell, Esq., M.A.; The Duke of Northumberland; George Richardson Porter, Esq.; Lieut.-Col. Sykes.

Before the election, the noble President addressed the society, and announced that medals had been awarded to Sir J. F. W. Herschel and Mr. Fownes.

Dr. Roget, before reading the obituary notices of fellows, stated that it was his intention, at the next anniversary meeting, to resign the office of secretary, which he had held for a period of twenty years.

MEDICAL GAZETTE.

FRIDAY, DEC. 3, 1847.

THE Influenza which has been prevailing for some time past in the northern parts of Europe, has recently made its appearance in the metropolis, and, from information which we have received, it has been exceedingly prevalent in all quarters. Some thousands of all ages have been attacked by it. The symptoms are, on the whole, mild: there is great languor, with depression, frontal headache, chilliness in the course of the spine, with pains in the limbs, and aching in the loins. With these symptoms there has been cough and sore throat, accompanied by enlargement of the parotid and submaxillary glands. A stimulating plan of treatment has been found to be most conducive to recovery; and, after a few days, the patient has been restored to convalescence. In the aged, the disease has been attended with serious consequences, by terminating in an aggravated form of bronchitis.

As we might suppose, the great prevalence of this disorder in the metropolis, is not in any way indicated by the Registrar-General's Table of Deaths. On turning to Influenza, we find enumerated from this cause, only four deaths during the last week;* and of these, three were among infants, and one in an individual above 60. The deaths from bronchitis, chiefly among old and young, have increased nearly fifty per cent. above the average. Here, then, we have a proof that the weekly table of *deaths* cannot throw any light upon the amount of *illness* in the metropolitan population, unless the prevalent disease be of a very fatal character. We require what Professor

* *i. e.* the week ending Nov. 30. The return just issued shews 36 deaths from this cause chiefly among the aged.

Casper has appropriately denominated weekly tables of *morbidity* as well as of *mortality*. Under a well-constituted Board of Health, it would be by no means difficult to organize a regular system of weekly returns of cases of disease admitted into the principal hospitals and infirmaries of the metropolis.

We might be disposed to refer the appearance of this epidemic to the very sudden and extensive changes in temperature which have recently taken place, and to the large amount of moisture with which the air has been for some time saturated; but local meteorological causes will scarcely account for it, since the disorder exists at the present time with equal intensity in various parts of Europe remote from each other. In a late number of this journal* we announced the existence of influenza at Copenhagen, where it had attacked a large portion of the population. In the daily papers it was erroneously reported that the disease which had thus broken out in Denmark, was the cholera. We now learn from the Continental journals that the influenza (*La Grippe*) has appeared in Marseilles, and that within the short space of a week it attacked one-half of the population, *i. e.* 80,000 persons. It is of a mild character; but great alarm has been excited there, and in other localities where influenza has appeared, from the prevalent belief that it is the forerunner of the Asiatic cholera. In this country, however, the most severe form of epidemic influenza was observed to follow the malignant cholera of 1831-2.

We have thus evidence of a similar epidemic disorder attacking almost simultaneously three cities forming a triangle on the map of Europe—Copenhagen being nearly equidistant (about 700 miles in a right line) from Marseilles and London. To add to the difficulty of accounting for the origin

* Nov. 19th, p. 906.

of these epidemics by medical theories, we may mention a curious fact that may throw some light upon the diffusion of cholera, by shewing that an epidemic and a quasi-contagious character may be observed in one and the same disease. The French steamer *Luxor*, which runs between Alexandria and Marseilles, recently arrived in Egypt with the influenza on board. The crew were so severely affected that the vessel did not make its usual passage to Syria. To say that influenza is an infectious disease, would be contrary to the general opinion of those who have watched the progress of epidemics; but how is it to be explained that a vessel sailing from a port where influenza is very prevalent, can transport with it an epidemic in a severe form over so large a portion of sea? It is not stated whether, after the arrival of the vessel in the port of Alexandria, influenza had appeared among the inhabitants.*

We elsewhere publish an account of the progress of cholera in Russia.† It appears to be slowly extending itself westward from Moscow towards the shores of the Baltic. We last week announced that it had reached Duna-berg, on the Dvina;—the nearest port to this town is Riga, which suffered severely from the last visitation of cholera. The latest intelligence which we have seen, *via* Stockholm, announces that the cholera had appeared in St. Petersburg and at Cronstadt; and that the rules of quarantine were to be strictly enforced against these towns, as well as against all the ports of Russia. It is confidently stated that

the disease is of a much milder form, and more amenable to treatment, than the cholera of 1831. The Reports before us, however, show that while the attacks are not so numerous, the proportion of deaths to the number attacked, is still enormous. Thus, during one month in 1830, 25,270 persons were cut off by the disease in the Russian province of Astrachan; and of this number 4000 persons died in the city. Under the late irruption, continuing for a longer period, there have not been more than 3772 deaths in the whole province, and it is reported that the disease has totally disappeared. In September 1831, the cholera made its appearance in Moscow, and attacked in four months 9000 persons, of whom one half died. On the present occasion the disease broke out in that city on the 30th September; and up to the 1st of November, *i.e.* one month, there were 1197 cases, and 402 deaths—a mortality of rather more than one-third; but by the latest accounts from this populous city, we are sorry to perceive that not only have a greater number of persons been attacked by the disease, but that the rate of mortality has rather increased than diminished. Thus, while the average number of cases per day for the whole month, was not more than 36, they reached in the last week of October 91: when, too, we remember that on the last occasion the cholera remained in Moscow for a period of five months, it is difficult at present to institute any comparison respecting the relative intensity of the past and present visitations. How far the disease has been amenable to treatment under the hands of Russian physicians, our readers will be enabled to judge by the following statement of the proportionate mortality from cholera in its progress through the empire. Thus, in relation to the cases, the deaths have been:—

* By later intelligence, we learn that influenza was very prevalent at Nismes, Montpellier, Perpignan, and Toulouse. In the latter city 15,000 persons were affected by it. *L'Union Médicale*, of the 27th November, states, that a large part of the population of Paris has been attacked by the disorder. It has also spread to a great extent through the north of Scotland.

† See page 996.

In the government of Koursk	65 per cent.
“ “ Kazane	54·3
“ “ Kiev	40·6
“ “ Kharkov.	29·5
In Moscow city, last week Oct.	35·5
“ “ month Oct.	33·5

The total deaths, as well as the total cases, are fewer in number; and this is the only satisfactory conclusion to which we can come from the documents before us. Further, the attacks of the disease are chiefly confined to the poor, destitute, and ill-fed classes; and the fatal cases are most numerous among those who have exhausted their powers by habitual drunkenness or intemperance.

Much has been said and written respecting the mode in which this singular disease is diffused. That the poison of cholera is spread in some way or other cannot admit of dispute. One class of observers content themselves by saying that cholera is not infectious, adducing cases apparently irreconcilable with this hypothesis. Admitting the validity of these objections, it still remains to be proved that the cholera is a pure epidemic; and this part of the case, the advocates of the doctrine of non-infection have not troubled themselves to examine. The mere disproof of one hypothesis, however, does not establish the truth of another; although this seems hitherto to have been taken for granted. Let any one examine the recent progress of the cholera northward and westward through the Russian empire, and say whether it is in the nature of an epidemic to creep slowly from place to place, to follow the banks of great rivers, to prevail on one bank and not on the other, to spread along one side of a street in a populous city and not on the other, to set at defiance in its progressive diffusion, the influence of winds, temperature, seasons, and all those atmospheric changes included under the head of climate.* If the

cholera be a pure epidemic, these circumstances show that it is one *ex generis*;—for the laws of its propagation are quite inexplicable upon the common doctrine of epidemic diseases. Its diffusion through the atmosphere is all but disproved, since if this were the medium whereby the poison is transmitted, we should have it radiating equally around from a focus of great intensity, or obeying the course of prevalent winds. But such a mode of diffusion has not been observed: and it is really questionable whether it does not require a larger amount of credulity to believe in the *epidemic* than in the *infectious* propagation of the disease. It has been often remarked that a town or village situated between two others infected with cholera, has escaped. This has been adduced as a triumphant instance of its non-propagation by human intercourse, or of the total absence of infection. The argument is ingenious, but unsound, because it proves too much: it just goes to show that the cholera cannot be communicated or diffused in any conceivable manner! If the disease were really epidemic, and the atmosphere had any influence in its diffusion, it would be utterly impossible that the intermediate town or village should escape the aerial poison, unless we were prepared to admit that the winds were always blowing from this town as from a centre, or that some M. Ledoyen was busily engaged in destroying the cholera-poison by his disinfecting liquids! Either of these exceptions would, however, require a larger amount of faith than we can concede to the epidemists. There is another hypothesis which has found a few advocates, *i. e.* that cholera does not travel, but that by a sort of coincidence, and by a species of *epigenesis*,

ratov, it was remarked that the cholera advanced constantly *against the wind*. It chiefly manifested itself in villages immediately *after* the arrival of travellers labouring under it.

* In its recent progress from Astrakan to Sa-

the seeds of the disease arise spontaneously in one town or village as soon as it has ceased to appear in another adjacent to it. On this showing, it is not of Indian but of local origin. We think, however, the geographical progression of this malady must be taken as fatal to this view. Our own belief, as it was expressed in this journal at the time of the irruption of cholera in 1831-2, is, that it is not a pure epidemic, nor a universally infectious malady; but that it can be decidedly propagated by human intercourse. We know that hundreds of cases may be brought forward tending to show that the disease had broken out, and that there was no evidence of a communication by infection. Our answer is, that the same observation has been repeatedly made regarding typhus fever, and that facts do not neutralise each other like acids and alkalies:—hence one good affirmative instance, as in the simple transference of the cholera from this country to Canada in 1831-2, cannot be overturned by a hundred negative cases.

It is very likely that no quarantine laws will keep the disease out. Those who have had the infelicity to undergo quarantine, will have no difficulty in accounting for the failure of this artificial barrier to prevent the introduction of disease. The quarantine regulations, as they are carried out in some of the Mediterranean States, are a perfect libel upon common sense. The Board of Health of Naples has just issued a decree placing under close restrictions, all vessels coming from the Levantine ports or from ports to which these vessels trade, as those of France, Malta, Greece, and the Ionian islands. Such vessels will be refused admission into the ports of the Two Sicilies, unless provided by the Sicilian Consulates with special certificates of health. This proclamation is intelligible enough: there are very

heavy fees payable for certificates, &c. out of which the Neapolitan Board of Health, consisting of a complete army of lazy functionaries, contrives to obtain a good means of support! The mis-called Sanitary Board of Naples is doing all that it can to bring quarantine laws into perfect contempt; for while its rules are for the most part based upon purely mercenary motives, they are quite inefficient. We can speak from personal experience in this matter, having performed quarantine in a Neapolitan port, and observed that although the officials went through the ceremony of taking the passports and letters on a long stick, singeing them, cutting them, and fumigating them with vinegar, yet by bribery there was a free intercourse at night between the ship and the shore. Such abuses may not, it is true, be carried on in this country: nevertheless, without completely stopping our commerce with the North, and the perfect suppression of smuggling, it would be very difficult to keep out the cholera by any quarantine regulations.

OPERATORS in England and France are now busily engaged in testing the effects of Chloroform-vapour; and, from the reports which we continue to receive, it appears to have, over ether-vapour, all those advantages which have been announced by Dr. Simpson. In midwifery practice, it has been found to be especially serviceable, and we elsewhere* insert a letter on its safe application in dentistry. It has been used in the Parisian hospitals with perfect success, by MM. Roux, Blandin, and Amussat, in the performance of minor operations. An inhaling apparatus was tried, but abandoned, as less effectual than the simple method recommended by Dr. Simpson.† A portion of the vapour is lost by this

* Page 998.

† See last number, page 937.

plan, but this is unimportant. As the vapour is exceedingly dense (being to air as 4.2 to 1), the loss is diminished, if the head, during respiration, be inclined slightly backwards.

The reports agree in representing that no pain or irritation has been experienced by the patient in respiring the vapour; and that the return to consciousness was rapid, and not marked by confusion of intellect or nausea. In one instance, a slight quivering of the lower extremities was observed. In all cases, sensibility to pain has been completely destroyed. The section of sensitive parts by a knife, the application of caustic, and electro-puncturation, have been resorted to without giving rise to the slightest sensation of pain. In one or two instances, there has been a complete paralysis of motion and sensation, with a retention of consciousness.

While, however, these facts appear to promise safety in the use of Chloroform-vapour, the experiments of Dr. Glover on animals, tend to show that this agent is not to be regarded as innocuous. He found that it had a tendency to cause congestion of the lungs.* His experiments were not performed with the vapour, and the mode of introduction into the system by the lungs may considerably modify the effects.

Our readers will not be surprised to learn that the French have put in a claim against Dr. Simpson for the originality of the discovery. *L'Union Médicale*† declares that it is to France, and to a French physician, that all the honour of the priority of this discovery, is due! Of course!—When our continental brethren did not hesitate to appropriate to themselves Marsh's ingenious invention for detecting arsenic, upon the strength of some old experi-

ments, performed many years before on arsenuretted hydrogen without leading to any practical results, it is not surprising that they should equally make free with this mode of applying Chloroform vapour. The claim is founded upon a communication made by M. Flourens to the Academy of Sciences, in March 1847, and published in the *Comptes Rendus*, tome xxiv. p. 342. M. Flourens states:—

"Hydrochloric ether produced the same effects as sulphuric ether. The action of hydrochloric ether has led me to test the properties of the new compound known under the name of *Chloroform*. In a few minutes (from four to six), an animal exposed to the respiration of the vapour of this liquid, became perfectly etherized. The spinal marrow was then laid bare, and the posterior roots were found insensible."

"Thus," observes the writer, "M. Flourens was undoubtedly the *first* to employ Chloroform-vapour, but to Dr. Simpson the merit is due of having first experimented on the human subject, and in a more complete manner." He is, however, wrong in both of these statements. We are not going to let the question remain open between Scotland and France; but shall proceed to put in a claim for England. As we announced last week, Chloroform-vapour (under the common name of Chloric ether) was used by Mr. Jacob Bell in the human subject, as early as January 1847.* Mr. Bell states that it (chloric ether) "has been tried in some cases with success. It is more pleasant to the taste, but appears to be rather less (?) powerful in its effects than sulphuric ether." Thus, then, neither France nor M. Flourens can claim the priority of use, nor is it true (as far as at present appears,) that it was first employed in the human subject by Dr. Simpson. On the principle

* See page 979.
† November 23d.

* See Pharmaceutical Journal for Feb. 1847, page 357.

of *sum cuique tribuito*, we shall sum up as follows. From documents yet published, the discovery of the narcotic effects of this vapour on man is due to Mr. Jacob Bell,—and the discovery of the useful and extensive application of it as a substitute for ether in surgical and obstetric cases, is exclusively due to Dr. Simpson. We are sorry to deprive France of any portion of scientific glory on this occasion; but as dispassionate judges, with these facts before us, we are unable to award to M. Flourens more than the merit of having exhibited to animals, a vapour which had already been employed in this country in the human subject, for a more useful purpose than that of examining its effects on the posterior roots of the spinal nerves.

Reviews.

Lectures on the Physical Phenomena of Living Beings. By CARLO MATTEUCCI, Professor in the University of Pisa. Translated under the superintendence of JONATHAN PEREIRA, M.D. F.R.S. &c. 8vo. pp. 435. London: Longmans. 1847.

WE learn from the preface to this volume that the lectures of Professor Matteucci, although delivered so recently as 1844, have already passed through two editions in Italy, and one in France. The English translation, edited by Dr. Pereira, has been made from a copy furnished to him by the Professor containing a large number of additions and corrections. The English reader may therefore consider that in the work before us, he has these lectures in the most authentic shape.

The name of Matteucci must be familiar to most of our readers. Translations of his lectures have been published in some of the English medical periodicals; but these have appeared only at intervals, and have been mixed up with other and irrelevant subjects. Until the present time, English practitioners have not been in a position to judge fairly of the interesting labours of Matteucci: they have now, however,

in this small and compact volume, an excellent translation, made under the superintendence of a man of high scientific reputation, and capable of doing justice to the subject.

Professor Matteucci opens to view a new branch of medical science, which may be called Physical Physiology, or the united application of the principles of Physics and Physiology to the explanation of the phenomena observed in living beings. In about twenty chapters the author brings before us the following subjects: Molecular Attraction, Capillarity, Imbibition, Endosmose, Absorption, Digestion, Respiration, Hæmatosis, Nutrition, the production of heat, light, and electricity in animals, the physiological action of Gravity, Light, Caloric, and Electricity, Nervous Force, Animal Mechanics, the circulation of the Blood, with an account of the functions of the Vocal Apparatus, of Hearing and Vision. From this summary our readers may judge of the variety, interest, and novelty of the contents. The illustrative experiments are numerous and ingenious; and these are rendered intelligible by the occasional introduction of wood-engravings.

The quotations which follow are selected chiefly for the originality of the observations contained in them.

The light of the Glow-worm.—"1st. The phosphorescence of the glow-worm may cease without the insect being dead.

"2dly. There exists in this insect a matter which evolves light, without any appreciable heat; and the animal to manifest this property, does not necessarily require either to be entire or to possess life.

"3dly. Carbonic acid and hydrogen form a medium in which the phosphorescent matter of the glow-worm ceases to shine after an interval of time not exceeding thirty or forty minutes, provided that the gases are pure.

"4thly. In oxygen gas, the brilliancy of the phosphorescent matter is considerably greater than in atmospheric air, and the duration of the phosphorescence is nearly three times as long. This holds good with regard to the luminous segments only, as well as with the entire animal.

"5thly. This phosphorescent matter, placed under conditions suitable for the emission of light, absorbs a portion of oxygen, which is replaced by an equal volume of carbonic acid.

"6thly. This same substance, when deprived of its faculty of glowing, and then

placed in contact with oxygen gas, no longer absorbs oxygen, or produces carbonic acid.

"7thly. Oxygen mixed with either hydrogen or carbonic acid, in the proportion of 1 to 9, forms a medium in which the phosphorescence continues for several hours. We may, therefore, conclude that it is in consequence of some alteration in the phosphorescent matter that this ceases to glow after it has been for some days in pure oxygen, one portion only of which has been replaced by carbonic acid.

"I examined the hydrogen in which I had kept several glow-worms for the space of twenty-four hours, and in which they had glowed for a few minutes only. The following is the result obtained when the gas was pure, and the experiment was conducted over mercury; the bell-glass being carefully filled by inverting it two or three times, in order to get rid of all the air adhering to the glow-worms: the volume of the gas was slightly augmented: with 8 cubic centimetres of hydrogen, I obtained an excess of 0.2 cubic centim. which was absorbed by potash. Thus, then, the insects produce carbonic acid, which must either be formed by the union of carbon with the oxygen remaining in the tracheæ, or exist ready formed in the animals. When the luminous segments alone are placed in hydrogen, with due precaution, they glow for a few seconds only, and the gas is not altered.

"8thly. Heat, within certain limits, augments the light of the phosphorescent matter; cold has the reverse effect.

"9thly. When the heat is too strong, the phosphorescent matter becomes altered, as it also does when placed in the air, or in any gas whatever for a certain length of time. This undoubtedly is the reason why these insects cannot live in all climates, and why they shine only during certain months of the year.

"10thly. The phosphorescent matter, when thus altered, is no longer capable of emitting light, or of becoming luminous.

"These conclusions evidently prove the nature of the phenomenon: the production of light by this insect is essentially connected with the combination of oxygen with carbon, which is one of the elements of the phosphorescent matter." (p. 176.)

"Matteucci is well known to physiologists for his application of the galvanometer to the study of the electric phenomena of animals. By the aid of this instrument, he has not only established the existence of a muscular current of electricity, but has also developed its laws. The following is an account of his *animal galvanic pile*.

"*Muscular pile*.—I take five or six frogs prepared after the manner (already men-

tioned) of Galvani; I cut them in halves, separate the thighs from the legs by disarticulation, and divide the thighs transversely into two parts. I thus obtain a certain number of the halves of thighs, from amongst which I select those only which belong to the lower portion; I arrange this series of demi-thighs upon a varnished tray, in which are some cup-shaped depressions or cavities. I first place one of these demi-thighs in such a manner that its external surface is contained in one of these cups. Next to this I place another, in such a position that its external surface is in contact with the internal surface of the first; and in this way, one after the other, all the demi-thighs are arranged in a row, touching one another, and with the same surface always turned in the same direction. The last demi-thigh, like the first of the series, should be placed in one of the cups of the tray, but by its internal surface.

"Here, then, we have a pile of demi-thighs of frogs, of which one extremity is formed by the external surface of the muscle, the other by the internal surface. I fill the two cups with a weak saline solution, or even with distilled water; plunge into them the two extremities of the galvanometer, and immediately I observe a deviation of the needle, which before the immersion of these conductors was at 0°.

"Thus, then, the presence of an electric current produced by a pile formed of the muscles of the frog is demonstrated by the galvanometer. Vary the experiments as much as you like; in lieu of the muscles of frogs, use the muscles of other animals, of fishes, birds, or mammals, and, provided that you keep the relative position of the muscular elements, before pointed out, namely, the internal surface next to the external of the muscle, you will always obtain a deviation more or less great of the galvanometer needle: this deviation will indicate *constantly*, by its direction, the presence of a current proceeding in the pile from the internal to the external surface of the muscle.

"I must observe that the intensity of the current is in proportion to the number of demi-thighs employed to form the pile. Here is a pile formed of ten demi-thighs; the variation of the needle is from 30° to 40°; here is another with six elements, and the needle marks from 10° to 20°; in a third, composed of four elements, it deviates only from 6° to 8° at the utmost. The increase of the intensity of the muscular current, in proportion to the number of the muscular elements employed to form the pile, is constant, whatever may be the animal from which the muscles are taken.

"If, in place of arranging the ele-

ments in a straight line to form the pile, you dispose of them in such a way that they form a semicircle, and thus shorten the distance between the poles, you may close the circuit with the single nerve of the galvanoscopic frog, and by its contractions infer the existence of the electric current." (p. 194.)

Liebig's hypothesis respecting the origin of this current is thus very quietly disposed of:—

"*Liebig's hypothesis untenable.*—Liebig, finding a free acid in the substance of the muscle, and knowing that the blood and lymph are alkaline, fancied that he could explain the muscular current by saying that it is due to the combination of the acid with the alkali of the blood. But it is obvious that, on this hypothesis, the laws of the muscular current which we have given, cannot be understood. Weak acid and alkaline solutions are found in the tissues of animals where there is no electrical current. [The muscular current, whose direction from the interior to the surface of the muscle is constant, whose intensity and duration vary in a constant manner in mammals, birds, reptiles, &c., and which is destroyed by sulphuretted hydrogen, and by want of respiration, does not admit of so vague an explanation, and one so little founded in fact.]"* (p. 201.)

If this be not sufficient to show the haste with which Liebigian hypotheses are constructed, we may turn to another part of the volume, and there we find described, the results of a simple experiment, which completely refutes the explanation of the learned Professor of Giessen.

"The muscular current is *not diminished* by repeatedly washing the muscles in pure water at the ordinary temperature. I have many times observed the same deviation (of the magnetic needle) sometimes a trifle stronger, sometimes a trifle weaker, by means of a pile of a certain number of elements or halves of thighs, washed or not washed in pure water" (p. 296).

This furnishes a convincing proof of the very unphilosophical way in which Liebig sets to work in constructing some of his hypotheses. It would have been an easy matter for him to have ascertained whether the intensity of the current was at all affected in removing the acid and alkali by washing the muscle in water: but here, as in other

cases, he goes a shorter way to work. He prefers the plan of inventing an hypothesis, and leaving the facts to adjust themselves to it. Let the manner in which the *proteine* doctrine has been advocated and then rejected by himself, within a few years, testify that this censure is not unmerited. He stands self-convicted of adopting views rashly and without experiment, or of abandoning them, through personal feeling against the discoverer, upon insufficient grounds. Trusting to the fixedness of Liebig's views, Matteucci has taken up his formula for *proteine* (p. 99). A note by the editor shows, however, that the author would have done more wisely to have exercised that distrust of them which the results of his own experiments, in reference to the course of the muscular current, would have fully justified.

The following remarks on the influence of temperature on animal life, are of some interest:—

"Man, and mammals in general, are able to support a temperature much higher than that which is proper to them. The observation of Tillet and Duhamel is well known. They saw a young girl remain for twelve minutes in an oven, the temperature of which was 128° centig. [= 262°·4 Fahr.]. Delaroche and Berger introduced rabbits, cats, and several other vertebrated animals, into an oven heated to from + 56° to + 65° centig. [= 132°·8 to 149° Fahr.]. The animals died at the expiration of some minutes. These observers concluded, from a great number of experiments, that vertebrated animals, when exposed to a dry atmosphere heated to + 45° centig. [= 113° Fahr.], are near the extreme limit of temperature in which they are capable of living. It appears, then, that man alone is endowed with the faculty of supporting a higher temperature; indeed, besides the instance already mentioned, there exist others, of the truth of which no doubt exists.

"Dobson tells us of a young man who remained for twenty minutes in an oven heated to + 98·88° centig. [= 210° Fahr.]; his pulse, which was usually sixty-five, was, when he came out, a hundred and sixty-four. Berger supported, for seven minutes, an atmosphere at + 109° centig. [= 228°·2 Fahr.], and Blagden was inclosed in one heated to + 127° centig. [= 260°·6 Fahr.].

"But it is different if the heated air be saturated with aqueous vapour. Berger could remain only twelve minutes in a

* The passage within brackets is a translation from a notice by Matteucci, in the *Comptes Rendus*, March 15, 1847.—J. P.

vapour bath whose temperature was raised from $+45^{\circ}.25$ to $53^{\circ}.75$ centig. [$=113^{\circ}.45$ to $128^{\circ}.75$ Fahr.]. The temperature which a man can support when in heated water, is still less than that which he is capable of enduring in a vapour bath. We shall soon see what are the causes of this difference.

"It was important to ascertain the variations in the temperature of animals exposed to different degrees of heat. If we limit ourselves to the ordinary variations of temperature of climates and seasons, the heat of the human body is not perceptibly modified. The numerous experiments of Dr. John Davy on this point give only very slight differences. Franklin was the first to observe that the temperature of his body was $+35^{\circ}.55$ centig. [$=96^{\circ}$ Fahr.], whilst the air was at $+37^{\circ}.77$ centig. [$=100^{\circ}$ Fahr.]. The conclusion drawn from this fact was, that warm-blooded animals had the faculty of remaining in a degree of heat below that of the medium in which they exist. Nevertheless, it was necessary to ascertain whether, if placed in a temperature much higher than that which is natural to man, the temperature of his body did not undergo some variations. Delaroche and Berger found an increase of 5° centig. [$=9^{\circ}$ Fahr.] in the temperature of one of them, who had remained for eight minutes in a chamber heated to $+86^{\circ}$ centig. [$186^{\circ}.8$ Fahr.]. The same experimentalists have repeated their trials upon mammals and birds, and ascertained that the exposure of these animals to a hot and dry air produced an elevation in their temperature, but that it cannot exceed 7° or 8° centig. [$=12^{\circ}.6$ to $14^{\circ}.4$ Fahr.] without causing death.

"An elementary knowledge of physics suffices to explain the effects of the exterior temperature on the heat of animals. The formation of aqueous vapour, which constantly escapes by the skin of an animal, is a permanent cause of refrigeration for it. This fact explains why in hot and dry air, the temperature of the animal is not so high as when the air is loaded with vapour.

"There exists, then, in the animal, a constant source of heat, and a constant cause of refrigeration, and an almost invariable temperature is maintained, notwithstanding the variations which take place in the exterior media, whether colder or hotter than itself, since the cause of cooling is more energetic in proportion as the temperature is higher, and *vice versa*.

"Edwards tried a great many experiments with the view of determining whether there existed any difference in the refrigeration going on in an animal, by its immersion in an atmosphere colder than its own, according as this was moist or dry; and the conclusion was, that it was the same in both

cases. If we consider that in moist air heat ought to be diffused more easily than in dry air, we may explain the result which Edwards obtained, by saying that the refrigeration produced by the more considerable evaporation which takes place in dry, can be compensated for by the loss of heat effected by contact with moist air. But there is, on the contrary, a very considerable difference in the cooling of an animal, according as the atmosphere is calm or agitated. When it is tranquil, and at a temperature below that of our own body, we lose heat by evaporation, by contact with air, and by radiation. The presence and nature of the gas and its agitation, have no perceptible influence on the loss by radiation; but this is not the case with the loss occasioned by evaporation or by contact with air, which is considerably augmented by the motion of the air. These results are evidently the consequence of the physical laws of the cooling of bodies in the air, and of the effects of evaporation. Parry relates, that he has often supported a temperature of $-17^{\circ}.77$ centig. [$=0^{\circ}$ Fahr.], without suffering therefrom, when the atmosphere was calm; whilst a cold of $-6^{\circ}.66$ centig. [$=20^{\circ}$ Fahr.] was very annoying, when accompanied by even a slight wind. And the surgeon who accompanied Captain Parry in his celebrated expedition, relates, that in a calm air, the sensation produced by a temperature of $-46^{\circ}.11$ cent. [$=-51^{\circ}$ F.] might be compared to that which they experienced at $-17^{\circ}.77$ cent. [$=0^{\circ}$ Fahr.] with a breeze. It follows from this observation, that a certain agitation of the air will produce a sensation of cold equivalent to the effect of a fall of $29^{\circ}.6$ of the centigrade scale [$=53^{\circ}.28$ of Fahr.]^{*} (p. 241.)

Although the researches of Matteucci are rather directed to physiology than to medical practice, still, in the chapter on the action of the Electric current, he throws out a few hints on its therapeutical applications.

"*In Tetanus*.—The use of the electric current has been suggested in another malady, namely, tetanus. I believe I am the first who has attempted its application to man.

"The principles on which its employment for the cure of this disease is founded, are

* "There is, I suspect, a typographical error, in one, at least, of the temperatures referred to. Captain Parry (*Journal of a Voyage for the Discovery of a North-West Passage*, 1821, p. 145), alluding to a temperature of -53° Fahr. [$=-48^{\circ}.3$ centig.] observes, that 'not the slightest inconvenience was suffered, from exposure to the open air, by a person well clothed, so long as the weather was perfectly calm; but in walking against a very light air of wind, a smarting sensation was experienced all over the face, accompanied by a pain in the middle of the forehead, which soon became rather severe.' Is this the passage to which Matteucci refers?—J. P."

the following. A current which circulates by jerks in an animal during a certain time, produces tetanic convulsions; the direct current, if continued sufficiently long, produces, on the contrary, paralysis. From this it was concluded, that the continued passage of the latter, in a tetanised limb, would destroy this condition, by producing a state more or less allied to paralysis. The truth of this conclusion is demonstrated by facts. In operating upon frogs which have been tetanised by narcotics or hydrocyanic acid, we observe a fit of tetanus cease under the influence of the prolonged passage of a direct current. The frogs die without presenting those convulsions, which are observed to take place, when these animals have not been submitted to the direct current.

"The effect produced by the application of the electric current in a case of tetanus, which I published in the *Bibliothèque Universelle* (May 1838), appeared to me in some degree to prove the truth of the scientific principles which I have explained to you. During the passage of the current, the patient experienced no violent convulsions; he was able to open and shut his mouth; and circulation and perspiration appeared to be re-established. Unfortunately, this amendment did not continue long; the disease being occasioned, and kept up by the introduction of foreign bodies into the muscles of the leg. Perhaps more satisfactory results from the electric current may be expected, in cases where tetanus has not been caused by a traumatic injury: moreover, we ought already to be thankful in being able to lessen the sufferings to which this dreadful disease gives rise.

"*In Urinary Calculi.*—Finally, it has lately been proposed to dissolve vesical calculi, and resolve cataract by the electric current. It is sufficient, however, to remember, that the substances which compose urinary calculi are insoluble in water, to be convinced that such an application has no basis to rest on.

"*In Cataract.*—As for cataract, I would remark, that by changing the position of the poles of a current, which has been made to pass through an albuminous liquor, we never find that the albumen coagulated at the negative pole, is redissolved at the positive pole. It is possible, therefore, to create a cataract, but impossible to destroy it.

"*In Aneurism.*—Petroquin, of Lyons, has recently proposed the use of galvanopuncture for curing certain aneurisms. This application appears to be founded on the property which the electric current possesses, of coagulating the serum of the blood, and, consequently, of partially filling up the aneurismal sac." (p. 277.)

A few years ago, a foreign quack in

this metropolis was rather profitably engaged in pretending to dissolve vesical calculi, to cure herniæ, and stop up the abdominal rings so as to prevent further protrusion,—by the agency of the electric current. Well-informed persons were deceived by the assurances of this impostor; and we believe that for a time he succeeded in reaping a profitable harvest among his dupes. It is a matter of surprise that some of the enterprising chiropodists have not taken up the cure of corns by the electric current! We would commend this to the notice of Mr. Eisenberg. As a scientific novelty it would be sure to attract the attention of the public; and a few cures got up for the occasion, might render it a highly profitable speculation.

The concluding chapters on the physiology of voice, hearing, and vision, are as interesting as any in the volume. In reference to that great *questio vexata*—the cause of erect vision with an inverted image—Matteucci says:—

"But how does vision result from this modification made upon the retina by the rays which external objects transmit? The first question that presents itself to our notice, without occupying ourselves with the metaphysical part of the subject is that of the position of objects. It has been repeatedly said, by way of explaining the inversion of the images as regards the objects they represent, that we see the produced images in an inverted position. To see objects in an inverted position of their images, is what we call seeing objects erect. In appreciating the position of bodies and their erection, we merely compare the position of their different parts with that of surrounding bodies. Without this, the words *reversed* and *erect*, as applied to objects, would be devoid of all meaning. To us, a man is in the upright position when his feet are towards the earth, and his head in the part most distant from it; and the reversed image which he forms upon the retina in no way deranges the respective position of the various parts of the man in regard to the earth. In the image, the feet are equally nearer the earth than the head. If an object presents itself to us really reversed, relatively to the position in which we are accustomed to see it, we consider that it has acquired the reversed position, because its image upon the retina is equally so, by comparison, with that which we ourselves hold, and to that in which we usually see it. We know that a man, and that each of us, has his, or our, feet upon the ground: but

when we see in the image formed upon the retina by a dancer, that his head touches the ground, we know that we see it in a reversed position." (p. 422.)

We think that our author here rather evades than explains the difficulty. We consider that a true philosophical explanation should be wholly independent of the position of the object with respect to other bodies. If instead of supposing an arrow placed vertically or parallel to the position of the spectator, we imagine it to be placed horizontally, so that its point is on his left hand and the feathered end on his right, it is a matter of demonstration that, according to the laws of light, the point will impress the right side of the retina and the feathered end the left. But our judgment of the position of an object is not formed by reference to the *side* of the retina upon which a ray of light happens to fall; *i. e.* there is no reason why because the right side of the retina is impinged by the ray, we must refer the position of the object reflecting it to our right hand. This would be making vision a mere mechanical operation, based upon the experience derived from common sensation. If the point of the arrow were an infinitesimal point of light, it could be seen by the eye, whether of an infant or of an adult, only in the *direction in which the ray of light proceeded*; the judgment of its distance depending on other physiological conditions. To assume that because the ray strikes the right side of the retina, the eye must necessarily refer its position to the right hand, is not warranted by any thing that we know of light and vision. To invent ingenious hypotheses in order to explain this apparent difficulty is, therefore, like striving to explain why we do not see an object out of the direction in which light proceeds from it—when the direction of the rays, as we see by the camera obscura, must necessarily rule its apparent position. An arrow reflecting light, presents only a succession of luminous points, and what is true of one is true of the whole. It appears to us that if in discussing this question, physiologists would only consider that a ray of light in falling upon the retina, does not operate mechanically like a blow on one or other side of the body,—that the retina in reality has no sides,—that the eye can take cogni-

zance only of the *direction* in which light falls upon the membrane,—and lastly, if they will lay aside the *inverted* image, and consider the question with respect to a right and left image,—the whole of the difficulties which have been supposed to beset this subject will disappear. Matteucci's view of this question would lead to the inference that infants who know nothing about the comparison of one object with another, see bodies inverted, until they have acquired by experience the power of comparing their position with respect to each other.

In concluding our notice, we candidly state our opinion that this volume ought to be in the hands of every professional man who takes any interest in physiology. The lectures are so clearly and concisely written that they will be equally instructive to the practitioner and student. The former will perceive in them an index of the great advance made in medical science since the days when the "*Elements of Richerand*" were considered to form the standard text-book of physiology; the latter will be delighted at the novel views which Matteucci's researches will lay open to him. The translation is admirably executed. The copious extracts which we have taken from various parts of the volume will sufficiently bear out this statement. Dr. Pereira has added a few notes, but he has judiciously allowed the author to speak for himself. Of one part of his plan we highly approve: he has duly considered that he was writing for English readers, and, therefore, foreign thermometrical degrees, weights, and measures, wherever the subject was of any importance, are rendered into English equivalents. This lends an especial value to his translation, and it is worthy of the greater praise, because the detestable system of leaving English readers to calculate the value of centigrade degrees, of millimetres and milligrammes, is now becoming a very common practice with those who undertake the translations of foreign works. They put off the reader with a general table of equivalent weights and measures, at the beginning or end of the volume, and think that they have thereby done all that their duty requires. They might just as reasonably leave one half of the work untranslated, and

suppose that they accommodate the reader by binding up an Anglo-French or Anglo-German dictionary at the end of the volume! The practice is based upon sheer laziness; the translator appears to think that he is justified in continually interrupting the progress of the reader by leaving him to make a complex calculation which he himself was too indolent to undertake. We could point to many translated works which are completely damaged by this defect.

We believe that Matteucci's lectures only require to be made extensively known, in order to ensure for them a large circulation.

Proceedings of Societies.

MANCHESTER PATHOLOGICAL SOCIETY.

Caries of Petrous Portion of Temporal Bone, &c.

MR. FLETCHER presented the petrous portion of the temporal bone of a boy, that was carious throughout, and displayed four openings on the petrous portion, each of which, directly or indirectly, communicated with the external ear. The internal auditory apparatus was quite destroyed. Pus was found beneath the periosteum covering the mastoid process. The dura mater, where it lies over the petrous portion of the bone, was thickened, and in one part destroyed. Here the brain was broken down with inflammatory softening to some depth. An encysted abscess, about the size of a walnut, projected into this disintegrated matter, and was separated from the rest of the brain by distinct membranous walls. Some ounces of pus flowed out from the base of the brain.

The patient, a strumous boy, 13 years of age, was under treatment for enlarged carpal bursæ. He contracted otitis after exposure to a draught on the 1st September. Tumefaction over the mastoid process appeared on the following day, and on the 7th an abscess was there opened, and some offensive fluid discharged, which continued to flow freely up to the day of death. On the 11th head symptoms developed themselves, with fever and delirium, and on the 26th he died in a half comatose state.

Tubercles in Liver atrophied by cyrrhosis, also in Spleen; dilated air-tubes; coagulable lymph expectorated.

DR. WATTS presented the diseased parts from a man, æt. 50 years, who died from

exhaustion attending the spontaneous purging out of dropsy-fluid, after having long had ascites and pulmonary catarrh, accompanied with expectoration of coagulable lymph.

The liver was in the last stage of cyrrhosis, and wasted to little more than half the ordinary volume; every here and there, throughout the cyrrhosed structure, were yellow tubercles, varying from the size of a laburnum-seed to that of a pin's-head; the peritoneal covering was opaque, white, and much thickened with old false membrane. The spleen, which was likewise enveloped with a thick coating of such membrane, had a very firm hard feel, and throughout its substance similar tubercles offered themselves to view. The tubercles, as examined by the microscope and chemical test, presented the characteristic appearances of true tubercle. The lower lobe of the right lung adhered to the thoracic parietes by a layer of false membrane of immense thickness; and the pulmonary substance at this part, though quite crepitant, had the blackened aspect usual after the resolution of pneumonia. All the air-tubes in this lobe were greatly dilated, and their mucous membrane was considerably hypertrophied. The rest of both lungs showed only slight traces of emphysema, and a very few grains of dark pulmonary matter, but no other disease.

From May to Christmas 1840, from Easter to October 1841, and from Whit-week to August 1842, the patient suffered from abscess near the anus, most difficult to heal. From March to July 1846, he had oppression at the præcordia, tenderness in the right hypochondrium, pain in both collar-bones and shoulders, palpitation of the heart, and obstinate constipation of the bowels. In July the dropsy set in, and about the same time he was attacked with pain in the right side of the chest, cough, and expectoration of frothy mucus, as also of pearly-white membranes, cylindrical in form, like casts of the air-tubes. During the summer of 1847, the pulmonary affection was greatly relieved, and in the autumn the expectoration of the membranous casts ceased, and the patient appeared in most respects better until the occurrence of the fatal diarrhoea.

Dr. Watts remarked, that the morbid appearances in this case were in some particulars unique, and so far as regarded the combination of the tubercle with cyrrhosis of the liver, it was the first example of the kind he had met with. Again, by the absence of tubercles from the lungs, the case offered an exception in the adult to Louis' generalization; the deposition of tubercles having been here confined simply to the sites where disease of the inflammatory kind had

first caused exudation of coagulable lymph, namely, to the liver and spleen.

The case likewise stood apparently opposed to the opinion Dr. Stokes entertained, that expectoration of coagulable lymph seems connected, if not with tubercle in the lungs, at least with decided tendency to that lesion. Coagulable lymph was here expectorated in great quantity for a long period of time, yet no tubercle was deposited in the pulmonary structure. If exudation of tubercular matter was notwithstanding associated in some way with the exudation of the lymph within the pulmonary apparatus, this could only have taken place from the surface of the large air-tubes (possibly from the dilated tubes) so as to have been directly expectorated.

It was also worth remark, that the patient had the most complete tolerance of mercury; no combination of mercurial preparations could be made to induce ptyalism, though administered to him both internally and externally for more than six months in succession.

Excessive Constriction of the Colon, without thickening.

Mr. R. JACKSON presented a portion of the colon of a woman, aged 26 years, who died from impaired function brought about through stricture of the colon at the part where the transverse arch joins the descending portion of the gut. The stricture was so advanced as scarcely to allow the passage of a small goose-quill. There was not any thickening either around or above or below the stricture. Above the constricted portion the bowel measured 14 inches in circumference; below, there were but a few small scybala. The small intestines were distended to the ordinary dimensions of the lower bowels. Some evidences of recent inflammation appeared in adhesions between the parietal portion and folds of the peritoneum. The mesenteric glands were enlarged, and contained tubercular and chalky deposit. The other viscera were healthy. It may be mentioned incidentally that a metatarsal bone of a pig, in an entire state, was found imbedded in the faeces above the stricture. Two years ago the woman caught cold whilst following out-door occupation in a farm. Diarrhoea followed, and became obstinate and long of cure. From that time the abdomen became distended, and she frequently vomited the ingesta, and complained of abdominal pains. For two months prior to death the woman passed no proper evacuation, and during the last month of her life the bowels were only twice opened, and then very scantily. Latterly she vomited up much offensive and bitter mucus.

That there was no thickening in this stricture implied loss of substance, and seemed

to indicate an ulcerative action accompanying the diarrhoea, which had existence two years prior to this person's death.

Tubercle in the Testicle of a Child two years of age.

Dr. RENAUD presented a coloured drawing of the genital organs of a child two years of age, the left testicle being affected with tubercle. This testicle was enlarged to the size of a pigeon's egg; it adhered to the depending part of the scrotum, which was of a deep red colour, inclining to purple. Six months ago the child was seen with this condition of the testis, which was then of some duration, and very indolent. The digital joints were scrofulously enlarged; there were scrofulous boils on various parts of the body, and a general tubercular diathesis prevailed. Three months after this the child was removed to the sea-side, when the testicle slowly suppurated, and in the course of a couple of months healed over. The upper part of the gland at this date seems yet entire, whilst the depending extremity is truncated; it bears evidence of loss of substance, and is firmly adherent to the scrotum.

Aneurismal Dilatation of the Ascending Aorta—great thickening of the coats of the vessel.

Mr. FARR presented a heart with the ascending aorta. The heart was large, flabby, soft, and easily torn. The ascending aorta appeared not less than three times its ordinary thickness; it was uneven on its interior surface, and there was a large aneurismal dilatation on the convex aspect of the vessel an inch and a half in diameter, half an inch in depth, and having the centre distant two inches from the valves. The cavity of the aneurism contained clotted blood. The liver was soft, the gall-bladder immensely distended with light-coloured bile, and containing three loose calculi, and a fourth impacted in the duct. The external crust of these calculi contained a considerable quantity of carbonate of lime. There was no jaundice.

The man, 72 years of age, died suddenly in bed. He had a severe attack of epistaxis a few days previously, but the heart was not then examined.

MEETINGS OF MEDICAL SOCIETIES APPOINTED FOR THE ENSUING WEEK.

Westminster	Sat. Dec. 4, 8 P.M.
Pathological	Mon. " 6, 8 "
Medical	" " " 8 "
Chemical	" " " " "
South London	Thur. " 9, 8 "

Correspondence.

CHLOROFORMIZATION IN DENTISTRY.

SIR,—Believing that the value of any discovery is to be tested by the aggregate of its results, I venture to offer my humble testimony, founded on experience, respecting the benefit to be derived from the employment of the new anæsthetic agent, which has been brought into public notice by Dr. Simpson of Edinburgh.

It cannot be doubted that suffering humanity is deeply indebted to that distinguished physician for the introduction of chloroform as an agent in annihilating the sense of pain, since it leaves nothing to be desired, either as to the facility with which it may be administered, the rapidity of its action, the completeness of its narcotic effect, or the persistence of the sedative influence.

On the 22d inst. I removed three painful molar teeth from a gentleman; on the 24th inst. I extracted two severely painful stumps of bicuspsids from a lady; and I have this day removed seven decayed and broken teeth from a young lady of a highly nervous temperament, and suffering from hysteria in a severe degree. In all these cases the patients were brought under the influence of the vapour of pure chloroform, and with perfect success. It was gratifying to observe the complete absence of any excitement; and that distressing difficulty of breathing, which often accompanies the inhalation of the vapour of ether, was in all these cases unfelt.

In employing chloroform the extreme simplicity in the manner of administering it is of singular value. On a small sponge I poured about 80 drops of the perchloride of formyle, and using the handkerchief of the patient to enclose it, I applied it gradually to the mouth and nostrils: in less than a minute the narcotic effect of the vapour was evident, and after a very few more inspirations complete somnolency was induced. The return of consciousness in the majority of the patients was gradual, natural, and resembled the act of awakening from a deep slumber. In one case only I remarked a slight tendency to nausea.—I am, sir,

Your obedient servant,
C. STOKES, M.R.C.S.

65, Lower Brook Street,
November 27, 1847.

METHOD OF PREPARING CHLOROFORM.

SIR,—As there may be many medical practitioners in the country who cannot readily obtain supplies of this substance, the anæsthetic properties of which have recently been

discovered by Dr. Simpson,* I think it not out of place to describe the way in which these gentlemen may prepare it for themselves, especially since the apparatus and materials are not expensive, and the process does not occupy much time.

The only chemical apparatus necessary are a spirit lamp; a long-beaked stoppered retort; and a small funnel, to pour a liquid into the body of the retort without soiling the beak. The place of a retort-stand may easily be supplied by a kind of three-legged stool, having a sufficient aperture in the top to support the retort steadily; and the lamp may be adjusted below it by pieces of wood, or a pile of books. The distilled liquid may be received in a flask, or a wide-mouthed bottle, into which the beak of the retort is loosely inserted a considerable way; and it will be proper to keep the receiver cool by covering it with a piece of blotting paper constantly moistened with water.

These things being provided, we first put into the retort a quantity of fresh chloride of lime (*Calx Chlorinata*, *Edinburgh Pharmacopœia*), and then pour over this a mixture of water and rectified spirit. This is the method proposed by M. Dumas in the 56th volume of the *Annales de Chimie et de Physique*; and the materials are to be in the proportion of an ounce measure of rectified spirit, four ounces (by weight) of the chloride, and twelve ounces of water. The retort ought to be so capacious as not to be above a fourth filled with the ingredients.

The materials being introduced, we must now mix them the best way we can, or at least get all the chloride made wet, which will be the easier if it has been pretty well powdered. Shaking does not answer the purpose very well at first, and it is scarcely safe to introduce any kind of stirrer into a glass retort. A rod of light wood, or a strong goose-plume may be cautiously drawn several times across the bottom of the vessel, and then agitation will accomplish the rest.

The heat of the lamp must at first be very sparingly applied, and it is not long before the removal of the stopper of the retort discloses the peculiar odour of chloroform. As we slowly increase the heat, we observe the mixture beginning to froth up, the odour issues from the mouth of the receiver, and drops begin to distil. All is now going on well; and it is only necessary on our part to watch, and be ready to reduce the heat, when the frothing threatens to rise too high.

The products of the distillation are water, along with chloroform. But these at once separate by their difference of gravity; the chloroform settling at the bottom of the receiver like a clear heavy oil, while water,

* See Account of a New Anæsthetic Agent, by J. Y. Simpson, M.D. &c. &c. Edinburgh, 1847.

impregnated with its odour, swims on the top; and the distillation is to be continued so long as this appearance can be produced, which may be ascertained by applying a fresh receiver. The supernatant water is easily decanted; and our chloroform is then ready for use. For though, in chemical books, it is directed to be washed in strong vitriol, and then re-distilled from carbonate of barytes, I apprehend this additional preparation to be quite unnecessary towards the medicinal application of the substance, since all that is aimed at is the removal of a trifling adherence of watery particles, which it is important to get rid of, only for the nice purposes of chemical research. I can at least certify that some I had myself prepared, without this further process, in the way described above, was administered with complete success at the New Town Dispensary in this city.—I am, sir, yours, &c.

SAMUEL THOMSON, M.D.

47, Castle Street,
Edinburgh, 23th Nov., 1847.

TREATMENT OF MEDICAL WITNESSES AT
CORONERS' INQUESTS — THE DIFFER-
ENCE BETWEEN AN "ORDINARY" AND A
"MEDICAL" SUMMONS.

SIR,—A dispute is about to be decided at the Bloomsbury County Court, in Berners Street, Oxford Street, on the morning of Wednesday, the 1st of December, between Mr. G. J. Mills, the Deputy Coroner for Middlesex, and myself, which is, I think, of general interest to the profession: and as such, I shall first give you the particulars of the case, and then mention what steps I have taken in the matter.

In September last I was called in to see a child that had been taken suddenly ill: after a few hours' illness the child died, and for my own satisfaction I proceeded the day following the child's death, to make a post-mortem examination. On arriving at the residence of the parents, I found the family in the greatest distress at the idea of a coroner's inquest being held to ascertain the cause of the child's death. There was a stranger in the house, who turned out to be the parish constable; but this I did not know till afterwards. He was there to tell the parents that he purposed applying to the coroner to hold an inquest. He desired me not to touch the body. I inquired on what authority he was acting; and said that as he had no authority to interfere with me, I should proceed with my post-mortem examination. From what I had seen of the child before death, there was no reason whatever to think that it had met its death by violence or unfair means of any kind. The child had been quite well at 6 o'clock P.M., about which time it was at-

tacked with dyspnoea, which continued getting worse till 1 o'clock A.M., when I saw it. The remedies made use of appeared to relieve it greatly, but towards morning the child became much worse, and died about 5 o'clock A.M. There was no cough. On making the post-mortem examination, I found three pieces of the kernel of a nut; two in the left, and one in the right bronchial tube.

Two or three days afterwards, at $\frac{1}{2}$ past 8 o'clock P.M., a warrant was brought to me to attend an inquest *then sitting* to give my evidence as to the death: I attended. My evidence was of course strictly medical, and on it the jury found their verdict. Mr. Mills, who was sitting for Mr. Wakley, refused me not only the fee for the post-mortem, but my fee for giving medical evidence.

Afterwards, on making inquiries, I found that I had by the Act of Parliament an undoubted right to a fee of one guinea for medical evidence; but the Act also distinctly says, if the post-mortem be made without the coroner's order, then the medical man is not to receive any fee for making such examination. I wrote both to Mr. Wakley and Mr. Mills, claiming the fee of £1. 1s. for medical evidence, but was refused; and no ground shown for this refusal. I then summoned Mr. Mills to the County Court, and the affair was postponed, but is to be heard again at 10 o'clock punctually on the morning of December 1st. As far as I could make out Mr. Mills' defence, it is as follows:—First, I opened the body in contempt of the coroner. This I deny, as the body was not under the coroner's protection at the time I made my post-mortem. Secondly, he says I attended and gave my evidence on an *ordinary summons*, and not on a *medical one*. This I did through ignorance: but whose fault was that? If I had for one moment suspected that such an unfair advantage would have been taken of me, I should most certainly have refused to appear till I was properly summoned: if the coroner had sent me a verbal message, I should equally have attended. And I believe that many medical men have attended to a verbal message from the coroner, and been paid their usual fee: but I shall be wiser for the future. The act gives a form for summoning medical witnesses, which form I enclose; and by a more recent Act, there is a heavy penalty to be inflicted on any medical man refusing to attend to this summons.

But what protection have we from the injustice of a coroner? Mr. Mills, knowing what was the usual and legal form for summoning a *medical witness*, makes use of a summons for an *ordinary witness*; and, having extorted my medical evidence, then

turns round upon me, and says you have no right to your fee:—you have attended and given your evidence on an irregular summons. If the judge at the County Court should refuse to pay me, or should say that it is not in his power to compel the coroner, what am I to do? I have carried on the affair at great personal inconvenience on public grounds. I think the profession ought to know whether they are at the mercy of the coroner, or whether they have it in their power to compel him to pay what a special Act of Parliament has granted them.—I am, sir,

Your obedient servant,

ROBERT SYNNOT.

76, Cadogan Place, Nov. 29, 1847.

. Will Mr. Synnot be so good as to favour us with the result of this suit in the County Court, as it closely involves the interests of all medical practitioners?

Medical Trials and Inquests.

TRIAL OF A STUDENT FOR THE FORGERY OF THE CERTIFICATE OF THE APOTHECARIES' SOCIETY.

[Court of Queen's Bench, Nov. 30th.]

Regina v. Johnson.

THIS was an indictment for forgery, which charged the defendant, Henry Brady Johnson, a medical student, with forging a certificate or license of the Apothecaries' Company. The indictment contained several counts, one of which laid an intent to defraud the company of £6.

Mr. Humfrey, Q.C. (with whom was Mr. Deedes) appeared for the prosecution, and Mr. Serjeant Wilkins and Mr. Parry for the defence.

It appeared from the evidence, that the defendant had been for several years a medical student in King's College, London, and that on the 6th of May last he went before the examiners of the Apothecaries' Company, but was rejected. Feeling much disappointed, he was induced to tell a falsehood; and he informed his father and friends in Lincolnshire that he had actually passed the examination; and in order to support his statement he sent a paper to *The Times*, containing the names of those who had actually received their certificates, but leaving out one name and inserting his own instead. He then, on the 27th of May, went to Mr. Salt, an engraver, at Great Turnstile, and produced the certificate which had been granted by the company some few years ago to a surgeon of the name of Clapp, and which the defendant had purloined from Mr. Clapp, under whom he had been studying on board the *Dreadnought*. He then requested Mr. Salt to engrave a fac-

simile of that certificate, including the names of the examiners by whom that certificate had been signed. Mr. Salt, having obtained a deposit of £3. undertook to engrave the necessary plates for the sum of £10. 19s.; and having communicated with Messrs. Bush and Mullens, the solicitors to the company, he, at their suggestion, went on with the engraving. The defendant called several times during the progress of the work, and paid £3. further on account. Finally he called on the 1st of July, when the plates and several impressions were shown to him. He then paid the balance, making in all £10. 19s.; and, on leaving the shop with the plates and impressions, he was taken into custody by Mr. Forrester, the police officer. As soon as he found himself in custody the defendant confessed all that he had done, and addressed a letter to the governors of the company, in which he stated that he had been actuated by a desire to spare his father and friends the disappointment which they would experience from his rejection; that he did not intend to make any further use of the certificate than to exhibit it to his friends; and that he meant to present himself at the next examination in a state of better preparation. The defendant feelingly implored the company not to prosecute him, as it would be the ruin of his prospects in life as well as of the happiness of his family.

The case for the prosecution being concluded,

Mr. Serjeant WILKINS said, that the instrument which the defendant was charged with having forged, was so imperfect that it could not be mistaken. It did not contain the seal of the company, nor the name of the defendant, and in fact bore so little resemblance to a real certificate, that it could not impose on any ordinary person.

LORD DENMAN.—There is a count which charges an attempt to forge a certificate.

Mr. Serjeant WILKINS.—If the former part of that count were held good, he submitted it would be for the jury to determine whether the intent to defraud the company of £6. was proved.

LORD DENMAN said, the learned serjeant might address the jury upon that point.

Mr. Serjeant WILKINS then addressed the jury, and called several witnesses, chiefly professors of King's College, who spoke very highly of the defendant's character. They said he had always been steady, intelligent, and well-disposed, and had obtained some prizes at the college.

LORD DENMAN having briefly summed up,

The jury immediately gave a verdict of *Not Guilty*, adding that they believed the defendant had no intention to defraud the company.

. We have no doubt that the result is

quite satisfactory according to law. The idea that such an act would be perpetrated with the design of saving the mere cost of the certificate is absurd. Nevertheless, it does appear to us that it is or ought to be an offence for any individual to forge a public document of this kind. The result of the case, however, leads to the conclusion that the act of imitating the Apothecaries' certificate is no offence in law, provided it be so clumsily executed as not to impose on "any ordinary person," and provided the accused did not intend to save his money by the forgery!

Medical Intelligence.

THE CHOLERA IN RUSSIA.

OFFICIAL accounts from St. Petersburg, dated the 12th ult., announce that the cholera had made fresh progress at Moscow. Between the 25th of October and 1st of November the number of cases daily increased, 641 persons having been attacked during that period, 238 of whom had died. From the first appearance of the malady in that city up to the 1st of November, 1,197 cases occurred, 402 of which proved fatal. The patients belonged, for the most part, to the lower orders. The cholera had totally ceased in the government of Astrakan, where it carried off 3,772 persons, and in that of Koursk, where 1,087 died out of 1,673 patients. At Kazan there were 1,224 cases and 666 deaths. At Kiev the cholera was likewise increasing in intensity. Since the 26th of October 278 were attacked, and 113 died. In other governments the epidemic still endured. The most western points it has yet reached are the town of Alexandrof, in the government of Kherson, and the district of Olgapol, in Podolia. The latter are about 30 miles distant from the Austrian frontiers. So far, it has been generally remarked that its duration is shortest in the localities where its intensity is greatest.

The *Courrier* of Constantinople reports the occurrence of several cases in that city; and the continental journals announce that it has penetrated into the Prussian territory.

A fatal case has occurred on board the *Mentor* steamer, on its passage from Constantinople to Malta: and a quarantine of ten days has been ordered for all suspected vessels from the Levantine ports.

THE NEW ANÆSTHETIC AGENT.

DURING the last week, the Chloroform has been employed as a means of allaying pain during surgical operations, in most of the London hospitals. As far as we can learn the result of this experiment, as tested in several capital operations, has been to shew

that this agent produces its effect with more rapidity and certainty than the vapour of ether, and that its action appears to be attended with fewer disagreeable consequences—such as the evidences of pulmonary irritation, &c. Its influence as regards the condition of the patient during the operation, is considered to be nearly identical with that of the ether.

We understand that Dr. Simpson has employed chloroform vapour in midwifery practice for periods of two, four, and even thirteen hours, without injurious consequences.

EFFECTS OF CHLORIDE OF OLEFIANT GAS, FORMERLY CALLED CHLORIC ETHER.

IN our last number we suggested the importance of making a distinction between two liquids to both of which the name of *Chloric Ether* has been given. The necessity for this is shown by a communication which we have received from Dr. Simpson, in which he states that he has tried the Chloride of olefiant gas (the Dutch liquid or chloric ether of Thomson), and has found that it was wholly unfitted for inhalation, as it produced constriction of the throat and headache. He felt the effects of the vapour for twenty hours afterwards.

This shows how little the effects of a substance can be inferred from its composition; since in the chloride of olefiant gas there is one equivalent less of chlorine than in chloroform.

Chloroform is known by its insolubility in water.

SANITARY LEGISLATION.

LORD MORPETH announced in the House of Commons on Monday last, that the Government hoped to be able to introduce a measure with respect to the Health of Towns at an early day on the reassembling of Parliament after the Christmas recess.

MEDICAL LEGISLATION.

FROM a report just published, we find that, out of 115 acts passed during the last session, there was only one which had the slightest relation to the medical profession. This is the 10th and 11th Vict. c. 43—An Act for the Amendment of the Laws relating to the provision and regulation of Lunatic Asylums for Counties and Boroughs in England.

UNIVERSITY OF LONDON.

SECOND EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE—1847

First division.—Beck, T. S. Univ. Coll.; Bholanath Bose, Univ. Coll.; Brinton, W., King's Coll.; Crisp, H., King's Coll.; Eade, P., King's Coll.; Forster, J. C., Guy's Hosp.; Fotherby, H. I., Guy's Hosp.; Gopal Chunder Seal, Univ. Coll.; Greenwood, W. H., Guy's Hosp.; Hicks, J. B.,

Guy's Hosp.; Holman, W. H. London Hosp.; Johnson, W., Guy's Hosp.; Littleton, N. H., Univ. Coll.; Monckton, S. King's Coll.; Ramskill, J. S., Guy's Hosp.; Ransom, W. H., Univ. Coll.; Rygate, J. J., London Hosp.; Wiglesworth, H., University Coll.

Second Division.—Green, T. Royal Coll. of Surgeons in Ireland; King, G. H., Guy's Hospital.

EXAMINATION FOR HONOURS.

(The names are in the order of proficiency.)

Physiology and Comparative Anatomy.—Wiglesworth, H. (Scholarship and Gold Medal.) Univ. Coll.; Eade, P. (Gold Medal.) King's Coll.; Greenwood, W. H. Guy's Hosp.; Hicks, J. B. Guy's Hosp.

Surgery.—Ede, P. (Scholarship and Gold Medal.) King's Coll.; Forster, J. C. (Gold Medal) Guy's Hosp.; Fotherby, H. I. Guy's Hosp.; Hicks, J. B. Guy's Hosp.

Medicine.—Eade, P. (Gold Medal) King's Coll.; Johnson, W. (Gold Medal) Guy's Hosp.; Gopal Chunder Seal, Univ. Coll.; Fotherby, H. I. Guy's Hosp.; Rygate, J. J. London Hosp.; Hicks, J. B. Guy's Hosp.; Greenwood, W. H. Guy's Hosp.

Midwifery.—Wiglesworth, H. (Gold Medal) Univ. Coll.; Forster, J. C. Guy's Hosp.

M.D. EXAMINATION.—1847.

First Division.—T. H. Barker, Univ. Coll.; H. Bateson, Guy's Hosp.; Bose Bholanath, Univ. Coll.; A. Hadwen, Univ. Coll.; N. Parker, Lond. Hosp.; * P. Redfern, 1, Surgeons' Sq., Edinb.; W. H. Williams, Univ. Coll.

Second Division.—H. Bell, Guy's Hosp.; T. J. Sturt, King's Coll.

REMARKABLE EFFECT OF THE ELECTRIC FLUID.

As a matter of interest in a scientific point of view, it may be mentioned, that the wires of the electric telegraph have been sometimes thrown out of order during a thunder-storm. On one occasion, Morse's telegraph inscribed a mass of symbols on paper by the action of atmospheric electricity alone. The lightning sent its own message and recorded its own results! Many philosophers are already engaged in speculations on the probable effects which a net-work of electric telegraphs may have on thunder-storms.

THE GERMAN HOSPITAL, DALSTON.

For some time past, there has been a disagreement between Dr. Freund, the Directing Physician, and the House Committee of the German Hospital. Charges of improper conduct and of falsehood have been brought on both sides. A committee, appointed to investigate the charges against Dr. Freund, have reported that those as to conversation and conduct had been proved,

* To Dr. Redfern was awarded a gold medal for his Commentary on a Case in Medicine.

but that unnecessary provocation had been given to the Doctor, who had rendered great and gratuitous services to the institution. At a meeting which took place on Saturday last, a motion was made to the effect that the doctor deserved the continued confidence of the supporters of the society. This was met by an amendment—that the doctor be requested to resign. On a division, the amendment was lost by a majority of 4; there being for the amendment 33 votes, and against it 37. The division shows that the affairs of this institution are not likely to go on smoothly.

MEDICAL APPOINTMENT.

On November 26th, H. Haynes Walton, Esq. was unanimously elected surgeon to the Saint Pancras Royal General Dispensary.

ROYAL COLLEGE OF SURGEONS.

GENTLEMEN admitted members on Friday Nov. 26.—R. Dowell—H. W. H. Richardson—M. T. Mason—T. H. Mitchell—J. Marshall—E. Stride—G. F. Banks—J. Robinson—T. Smith.

APOTHECARIES' HALL.

NAMES of gentlemen who passed their examination in the science and practice of medicine, and received certificates to practise, on Thursday, Nov. 1847.—Ezra Harle, Stansted, Essex.—William Faithfull, Hurstpierpoint, Sussex.—John Pince, Challacombe, Bristol.—George Hodges, Ludlow, Salop.—Thomas Park, Lincoln.

From November, 1846, to November, 1847, out of a total number of 1373 bankrupts, nineteen were apothecaries, chemists, and druggists, and seventeen surgeons and dentists.

THE LATE DR. DIEFFENBACH.

It is stated that the remains of the distinguished surgeon, Dieffenbach, nine days after his supposed demise, showed no signs of decomposition, but rather resembled a person in a profound sleep than an inanimate corpse. His body had, consequently, been deposited in a chamber attached to the churchyard, and were constantly watched by two physicians, ready to assist the recovery should any signs of life appear.

THE LATE DR. CARRUTHERS OF DUNDEE.

It is our painful duty this week to record the death of this accomplished physician, at the age of forty-two, which event took place on Thursday, the 18th ult. from typhus fever, caught in the discharge of his professional duties. Enjoying an extent of practice which fell to the lot of few men, he prosecuted his profession with an ardour and enthusiasm which has been seldom equalled, and certainly never surpassed. He was, beyond all doubt, the most laborious man in

Dundee of any profession. Such were the unremitting demands upon his time, that those hours which even the most active men steal for rest or relaxation, were by him almost entirely given up to the demands of his profession. Nor were his attentions confined to the wealthy among his patients—they were equally bestowed on the poor and the rich. And it is due to his memory to state that often, when he found a patient oppressed with poverty as well as disease, he sent from his own house supplies of those cordials which, in such cases, are found to be the most useful medicines. In proportion to the extent of his professional employment—and even far beyond the circle of his acquaintance—has been the deep and general sorrow expressed at his early removal. Indeed, his death has been regarded as a public loss. He had reached the very zenith of his profession; and, possessing a vigorous constitution, might naturally have looked forward to many years more of successful exertion. His professional attainments were unquestionably of a high order.

ON the 20th ult., from fever contracted in the discharge of his duties as medical officer to the Aldgate District of the East London Union, Henry Baller, Esq., of No. 26, Jewry Street, Aldgate, aged 32.

On the 25th ult., suddenly, at 40, Guildford Street, Scrope Hutchinson, Esq. M.D. in his 60th year.

On the 28th ult., Dr. William Wilson, surgeon, R. N., 1802, aged 66.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	30.11
" Thermometer	40.57
Self-registering do. max. min.	18° 43°
" in the Thames water — 45° — 43°	
a From 13 observations daily. b Sun.	

RAIN, in inches, 0.14: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 2° below the monthly mean.

BIRTHS & DEATHS IN THE METROPOLIS During the week ending Saturday, Nov. 20.

BIRTHS.	DEATHS.	Av. of 5 Awt.
Males.... 616	Males.... 544	Males.... 528
Females.. 646	Females.. 542	Females.. 518
1256	1086	1046

DEATHS IN DIFFERENT DISTRICTS.

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 361,396)	180
NORTH—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 366,304)	167
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	205
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 393,247)	202

SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich .. (Pop. 479,468) 272

Total 1086

CAUSES OF DEATH.

ALL CAUSES	1086	Av. of 5 Awt. 1046
SPECIFIED CAUSES	1083	1039
1. <i>Zymotic (or Epidemic, Endemic, Contagious) Diseases</i> ..	346	311
<i>Sporadic Diseases, viz.—</i>		
2. Dropsy, Cancer, &c. of uncertain seat	80	104
3. Brain, Spinal Marrow, Nerves, and Senses	132	157
4. Lungs and other Organs of Respiration	238	333
5. Heart and Bloodvessels	30	34
6. Stomach, Liver, and other Organs of Digestion	86	74
7. Diseases of the Kidneys, &c.	16	9
8. Childbirth, Diseases of the Uterus, &c.	13	14
9. Rheumatism, Diseases of the Bones, Joints, &c.	12	7
10. Skin, Cellular Tissue, &c.	2	2
11. Old Age	40	65
12. Violence, Privation, Cold, and Intemperance	24	39

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	26	Convulsion	36
Measles	78	Bronchitis	61
Scarlatina	69	Pneumonia	85
Whooping-cough	24	Phthisis	108
Diarrhoea	0	Dia. of Lungs, &c. ..	8
Typhus	86		
Dropsy	10	Teething	5
Sudden deaths ..	4	Dia. Stomach, &c. ..	9
		Dia. of Liver, &c. ..	9
Hydrocephalus ..	24		
Apoplexy	25	Childbirth	9
Paralysis	24	Dia. of Uterus, &c. ..	2

REMARKS.—The total number of deaths was 40 above the weekly autumnal average.

NOTICES TO CORRESPONDENTS.

The Gleaner Laboratories.—We have to inform a correspondent, who has addressed us on this subject, that no description of these laboratories has appeared in the London Medical Gazette.

We think that the letter of M.D. Cantab., if published even with his signature, would not benefit the cause which he advocates. There is no danger of the opinions to which he refers, having any influence with the respectable portion of the profession.

We must beg to decline being present at Mr. Eilerman's deodorizing experiments on faeces, &c. Does the Committee of the Health of London Association patronise an antihomeric process, the nature of which is kept secret?

Dr. Davies, Hertford.—The very interesting medico-legal case will be inserted next week.

Dr. Dick's request shall be attended to. Will a Looker-on favour us with his name and address in confidence?

Dr. Wright's Inaugural Address has been received.

Received.—M.D.—Mr. Bentham Chandler.

Corrigendum.—In our last number, page 936, col. 2, line 4 from top, for "assisted by severe traction," read "by some traction."

Lectures.

COURSE OF SURGERY,

Delivered in the years 1846 and 1847,

By BRANSTY B. COOPER, F.R.S.

Surgeon, and Lecturer on Surgery at Guy's Hospital.

LECTURE XVI.

INFLAMMATION OF BONE.

Inflammation of bone—distinguished from formative action—effects of inflammation on bone the same as on the softer structures—diagnostic marks between inflammation of bone and periosteum—treatment—termination by adhesion, suppuration, mortification, &c.—ankylosis—difference between the osseous deposit produced by inflammation and natural bone—Distinctions of syphilitic inflammation of bone and that produced by accident—diagnosis—treatment.—Abscess in bone—more frequent in the spongy than in the compact bones—suppuration—necessity for the evacuation of the pus—symptoms—mode of treatment.—Caries of bones—identical with ulceration of soft parts—treatment—caries sometimes the result of the use of mercury—disease of bone indicated by the presence of phosphate of lime in pus—death of bone—exfoliation may proceed from debility, external injury, or malignant disease—treatment.—Necrosis—often idiopathic—absorption of bone—reparative process—property of pus to dissolve bone—removal of sequestrum by operation—power of reparation in proportion to proximity to heart's action.

Ossific inflammation is the term implied whenever there exists in a part an increased disposition to form bone, no matter whether such disposition be in the bone itself or the structures immediately covering it. This action is, in fact, actively going on during childhood, as the osseous system proceeds in development: it is purely a "formative" action, and cannot be considered to be within the usual acceptance of the term "inflammation;" for there is under these circumstances no greater quantity of blood sent to the bone, nor more of the ossific ingredients eliminated by the capillaries, than the tissues require. But when inflammation is produced and prolonged from effects which result either from excessive external violence, pressure, or any other abnormal cause, there is no longer a reciprocal action between blood-vessels and tissues, and surgical treatment is required

to subdue the excited circulation and restore the healthy equilibrium;—in fact, to incite the termination by resolution.

The effects of inflammation of bone are similar to those produced in the softer parts of the body, and swelling, heat, and pain, indicate its presence; but the termination varies in different bones, and in different parts of the same bone. The peculiar kind of pain perhaps constitutes the principal diagnostic mark; although it is frequently very difficult to distinguish the inflammation of the membranes from that of the bone itself, more especially as, from extension of the inflammation from one tissue to the other, they may become secondarily affected, although originally the diseased action was confined only to the one, or the other. If, therefore, a patient complains of a deep-seated aching pain, which is much increased at night, attended with swelling, heat, and perhaps some redness of the skin covering the affected part; and from the history of the case you find that these symptoms have resulted from external violence, exposure to cold and damp, have followed the use of mercury, or any constitutional disturbance, you may be assured that bone or periosteum is inflamed, or both. If bone alone be affected, the progress of the disease is much slower than when the periosteum is its seat; so that your judgment may be formed of the texture diseased by the acuteness of the symptoms, and upon the consideration of the structure of the bone affected.

Leeching, blistering, calomel, and opium, are the remedies to be employed, enjoining at the same time the recumbent posture. Under this treatment the inflammation generally terminates in resolution, unless, indeed, the medullary membrane is inflamed, when death of bone usually results: fortunately, however, this is but of rare occurrence, and I have only seen it follow amputations.

When the periosteum only is affected, the swelling and pain come on very rapidly, in which case the principal suffering results from the effusion between the periosteum and bone, and the consequent tension of the membrane: an incision should therefore be made down to the bone, which immediately affords great relief by evacuating the effusion, and thus checking the inflammatory action.

It is not always that inflammation of bone can be brought to terminate by resolution, as it will sometimes resist all the means employed to produce this result, but, as inflammation in other tissues, is liable to proceed either to adhesion, suppuration, or mortification, passing through all the premonitory steps, although more slowly than in the softer structures. The tumefac-

tion which occurs from inflammation of bone results from the deposition of osseous matter, just as the swelling caused by the inflammation of the softer structures of the body is produced by the deposition of adhesive matter. And when this osseous growth extends from one bone to another an ankylosis results, and the independent motions of the two bones is destroyed.

Before this condition can occur, the structures entering into the composition of the articulation must have become absorbed, frequently leading to such a high degree of constitutional disturbance as to render amputation necessary. If, however, perfect ankylosis is completed without considerable and permanent injury to the general health of the patient, the consolidation of the joint may be regarded as a happy termination to the disease, as it leaves the patient in a much better situation than if the limb had been removed.

Care should be taken during the progress of the ankylosis to maintain the joint at such an angle as will allow the patient, after the consolidation is complete, to sit down without the necessity for the leg being thrust forward; and, indeed, when it is slightly bent, the limb is better fitted to perform all its important offices, than if allowed to have ankylosed perfectly straight.

After fractures of the forearm or leg it is not very uncommon for an extension of this ossific "adhesive" deposition to take place in the intermediate tissues, and to unite the two bones to each other: this preparation exemplifies the liability, and offers a good illustration of the similar adhesive action which occurs in the soft and harder structures of the body.

But the whole substance of a cylindrical bone may be implicated in this inflammatory action, although it is more frequently limited to one aspect of the affected bone, as we often see in cases of nodes, which may occur from local injury, a certain extent of pressure, from diseased action, as in syphilis, or from the irritation produced by the presence of a portion of dead bone.

The deposit of bony matter which results from inflammation differs very much in texture from the naturally secreted bone: it may be either porous, compact, or intermediate, which depends in part upon the structure of the portion of bone affected, and in part upon the constitution of the patient, or upon the cause of the irritation which has induced the inflammation: in fact, inflammation of bone is regulated by precisely the same laws as inflammation of other tissues of the body.

When a bone becomes inflamed, we endeavour to subdue the inflammatory action by means very similar to those employed in overcoming inflammation of other structures,

and, if it goes on to the death of the affected part, we do all that is possible to assist nature in throwing off the dead portion by the process of exfoliation.

There are several specimens in the museum shewing the progress of the effects of inflammation, from the thickening of the periosteum to the ultimate death of the bone itself.

In practice, gentlemen, you must take care that you do not too hastily attribute the partial inflammation of bone, and consequent enlargements resulting from an accidental cause, to syphilitic action; for nodes on the tibia frequently follow slight blows and continued pressure: bricklayers, for instance, who, in carrying heavy weights up ladders, press their legs against the rounds to maintain their balance, are very liable to such enlargements, which are easily cured by rest and antiphlogistic means, but in such cases the bone would probably exfoliate if mercury were administered; for, although it is the periosteum only which is first inflamed, you are to remember that this membrane not only forms a covering to the bone, but that it passes into the intimate structure lining its cancelli; so that, by the extension of the inflammation, the whole substance of the bone becomes ultimately affected.

It is therefore upon the history of the case you must form your diagnosis, and, if there be no concomitant signs of syphilis, it is to be treated by simple antiphlogistic remedies—such as leeches, blisters, fomentations, calomel and opium at bed-time, perfect rest, raising at the same time the affected limb, so as to allow of the ready reflux of the blood.

Abscess in Bone.

Abscess may result from inflammation in bone under precisely similar circumstances to those in which it occurs in the other structures of the body. In our museum you will find various specimens of vertebrae which have been thus affected. Abscess may form in any bone, or in any part of a bone, but it is much more rarely met with in the shafts of the cylindrical bones than at their articular extremities, and therefore it is more frequent in the spongy than in the compact bones.

Suppuration in a bone may take place either on the surface or in the substance of the bone; when in the latter, the pus is confined, and causes considerable irritation, until ulceration of the bone takes place and leads to its evacuation, and even sometimes when matter is formed on the surface of a bone, if it be slow in its progress of formation, new bone may so incase it as to confine it for a considerable time—until, in fact, ulceration of the new shell of bone

occurs, and liberates the matter. The periosteum itself will often confine matter, and lead to the necessity of an incision to permit of its exit.

Enlargement of the bone is almost invariably concomitant with the progress of suppuration, so that, while the abscess is increasing in the interior, new depositions externally are going on almost indefinitely, and no limit is set to the increase in the size of the affected bone until the new substance ulcerates: hence the propriety of evacuating the matter as soon as its presence is ascertained.

This preparation, gentlemen, is a good specimen of a large cavity surrounded by a new shell of bone—in fact, an abscess in the head of the tibia. This form of disease used to be termed *Spina Ventosa*.

The symptoms of abscess of bone are very similar to those of abscess in the other tissues of the body. The progress is, however, slower, the pain more severe, and the constitutional disturbance greater, from the continuance of the irritation, from which no relief can be obtained while the matter is confined within the bone. I have said that a healthy bone is not susceptible of the sensation of pain, but not so when an abscess is forming. At first a very dull heavy pain is experienced, which is increased much during the night, or upon the slightest pressure; rigors supervene, and, soon after, the character of the pain is changed to a throbbing sensation. The skin next becomes discoloured over the seat of the abscess; at the same time, considerable swelling and hardness become evident between the skin and the bone, and, upon being cut into, it presents a scabrous appearance, owing to the effusion of earthy matter.

This condition alone in a great measure indicates the presence of an abscess; of itself, however, it could not perhaps be relied on; but, when the symptoms I have just mentioned are present, suppuration may be pretty certainly diagnosed.

If the abscess does not open by ulceration of the skin at this period, the patient may be greatly relieved by the surgeon cutting down on the bone. If, in dividing the periosteum, the bone should be found to be of a greyish colour, and of a worm-eaten appearance, and dry, a portion of it should be removed by a small trephine, and the pus evacuated.

After this has been effected, the violent constitutional symptoms immediately disappear. In sawing through the bone, very little pain is experienced until you come down to the membrane which forms the sac of the abscess—the *pyogenic* membrane; but directly this is touched by the trephine, the pain is excessive, and is described by patients as similar to the sensation caused

by sudden pressure on the nerve of a carious tooth.

The process by which the abscess is subsequently healed is exactly the same as in the case of abscess of the soft parts; the pyogenic membrane, no longer entire, soon becomes incapable of secreting pus, and throws out a plastic lymph, which forms granulations, and these receive nutrition, when they arrive at the surface of the bone, from the capillaries of the periosteum; earthy matter is deposited, and new bone formed. The granulations still continue to rise until they reach the level of the skin, restoring in progressive order all the deteriorated or removed tissues, and the skin being replenished, cicatrization is complete, and the wound is healed.

This, however, is not an invariable termination to abscess in bone, for when the articular extremities are in a state of suppuration the nutrition of the articular cartilages is interfered with, and disintegration and absorption of that formation frequently follows; the exposed extremities of the bones which enter into the composition of the affected joint become inflamed, ossific adhesion ensues, and ankylosis is the natural consequence.

But even without such a termination as this, as abscess in bone is generally concomitant with a broken-down constitution, a malignant diathesis, or a syphilitic taint, constitutional remedies are frequently indicated, and some specifics required to improve the general health of the patient, and tend to the healing process. Bone being more deeply seated than the other structures of the body, the diagnosis is more difficult than in disease of more superficial parts; and it therefore requires that you should the more carefully investigate the history of the case, and the temperament, constitution, and habits of the patient, before determining on the treatment to be adopted: you may, for example, find that although external injury was the first exciting cause, constitutional derangement might aggravate and keep up the morbid action.

The treatment of abscess in bone is much the same as in abscess in other parts; the first inflammatory symptoms may require to be subdued by antiphlogistic means, the matter to be evacuated as soon as its presence is evinced, and the granulating process assisted by such local and constitutional remedies as the particular case may indicate.

Caries.

Caries in bone, I suppose you are aware, gentlemen, is synonymous with ulceration in soft parts, and in both must be preceded by that character of inflammation which has a tendency to soften down the inflamed structures—to lead, in fact, to their disintegra-

tion, and fit them for their removal by the absorbents. I drew your attention this very day, gentlemen, to a case in Martha Ward. That patient is the subject of carious bone, resulting from a syphilitic taint; but it might have been produced by external violence: the only difference in the two cases would be, that the syphilitic caries would require to be converted into the simple kind by the administration of mercury, constitutionally destroying the specific action, and reducing the complicated into a simple disease.

There is often some difficulty in discovering the syphilitic taint, for the appearance of the affected limb does not denote the venereal character; but when we find, as in this case, that the disease in the bone was preceded by sore-throat, copper-coloured eruptions on the skin, nodes on the tibia, followed by rigors, and subsequent cutaneous ulceration, the nature of the case is rendered sufficiently obvious, and mercury clearly indicated; the action of the remedy having reduced the disease to one of a simple character, it requires no further treatment than to support the constitutional powers, any defect in which will be immediately denoted by the appearance of the granulations.

When caries occurs in strumous constitutions, it is often difficult to distinguish it from that arising from syphilis, in consequence of the unhealthy aspect of the ulcerated soft parts, and their peculiar hard everted edges. From the physical signs you can scarcely form a diagnosis, and you must seek for other indications to judge between the two. If there be no sore-throat, no cutaneous eruptions, no cicatrix in the organs of generation, and the patient persists in declaring the impossibility of such contamination, while at the same time a strumous diathesis presents itself, it must be treated with tonics, stimuli, iodide of potassium, and such remedies as tend to improve the general constitutional powers, avoiding mercury.

But if, on the contrary, symptoms of syphilis preceded the ulceration, mercury must be administered, in the form of Plummer's pill, or bichloride of mercury, with sarsaparilla.

I have used the term "syphilitic taint" again and again, gentlemen, this evening, but I am not sure that I have done so advisedly, for I believe this caries in bone invariably results from the use of mercury, and not from syphilis. Who ever heard of a person having diseased bones in syphilis unless mercury had been given? Sailors have often been known to become infected immediately before their embarkation, to have made a long voyage, and not to have taken any medicine. What is their con-

dition? Extensive ulceration of soft parts propagated, perhaps, by inoculation on the thighs and scrotum, but no disease of the bones. Why, then, you may ask, do I recommend mercury when caries has commenced? The answer is, I admit, difficult, and only to be reconciled by the belief in the hypothesis "*similia similibus curantur*;" and so much and no more of homeopathy am I inclined to believe, and this only in the few instances in which medicines are known to have a specific action, and even then only when administered in reasonable instead of imaginary doses. Strumous ulceration, or caries, very often attacks the carpus, tarsus, jaw-bone, and spine, perhaps the latter more frequently than any other of the bones of the body. You must have observed the frequency of lumbar and psoas abscesses; these are generally attended with a carious condition of the lumbar vertebrae. If the bones are not diseased, the prognosis is infinitely more favourable. It is important, therefore, that this point should be ascertained, which may be readily effected by the chemical examination of the pus, which for that purpose should be incinerated, and the inorganic residue dissolved in hydrochloric acid: evaporate the solution to dryness, and expose to red heat, to drive off the excess of acid; then wash the mass well with water, pour off the supernatant fluid, and dry and weigh the insoluble residue, which is phosphate of lime. If an appreciable quantity be obtained from an ounce of pus, disease of bone may be pronounced to be present, the extent to which it has proceeded being in some measure indicated by the quantity of phosphate of lime procured. It is this strumous ulceration of the articular extremities of the bones which so frequently leads to the destruction of a joint, by cutting off the nutrition of the articular cartilages, and thus producing disintegration and absorption of the cartilaginous matter, and ultimate ankylosis of the bones, if the constitution of the patient be sufficiently strong to carry him through this protracted process; but if otherwise, either the limb or the life of the patient will fall a sacrifice to the disease.

Bones are sometimes secondarily affected, and become carious from an ulceration destroying all the surrounding soft parts and extending to the bone itself; this occurs frequently from lupus, and here are preparations and casts showing the extensive destruction of the bones of the face from this disease.

Lupus, however, in my opinion, is not to be considered as a "malignant" disease; for although it possesses a tendency continuously to extend, like a phagedenic ulceration, it is not propagated in distant parts through the medium of the absorbents, nor does it

usually return if perfectly removed by chloride of zinc. Still, however, if the disease be allowed to extend deep enough to affect the bones, it generally terminates fatally,—I should say, by secondarily affecting the constitution, although it originally arose from a local deterioration of tissue: this circumstance constitutes a great characteristic distinction between it and malignant diseases. Caries, therefore, you observe, gentlemen, may arise from simple inflammation, from syphilitic taint, from strumous diathesis, or from malignant disease. Diseases of the bones exercise a powerful influence on the constitution, as might readily be supposed, from the constant and long-continued pain so generally concomitant with these affections, and which may render necessary amputation of the diseased limb, in order to relieve the constitution from a source of irritation beyond that which it is capable of supporting.

Death of bone.

Inflammation of bone may terminate in its death. It is often termed necrosis, but I do not think rightly, for by the term necrosis is implied that condition wherein a portion of bone has died, and when the living parts of the bone and the periosteum, both above and below the dead portion, have thrown out new bone, so that the loss is eventually compensated for. A patient may, for instance, walk about with some inches of dead tibia, supported by a shell of new bone formed around the dead portion, which is termed a *sequestrum*.

Such is the state of the parts when termed necrosis, but there is another form of death of bone called exfoliation, which must be considered as a partial death of bone, and, as in necrosis, which is a more complete death, there is a distinct transitive state analogous to gangrene of soft parts.

Necrosis and exfoliation both express, therefore, death of bone; the former may be described as internal, which leads to the deposition of new bone from the source of irritation which it induces on the living bone, and the latter external, from merely affecting the outer surface of the inflamed bone. Necrosis usually results from inflammation of the medullary membrane; exfoliation from the inflammation of the periosteum. John Hunter has also described what he termed "mixed exfoliation," in which internal and external exfoliation were coexistent.

External exfoliation of bone

May be occasioned by any cause which impedes the nutrition of the bone so as to cause its death,—whether it be the effect of inflammation, debility, external injury, mercury, or malignant disease.

It frequently, therefore, results from

abrasion of the periosteum, so that the nutrition of the part is impaired, the bone is exposed, inflames, becomes scabrous, sloughs, and is thrown off as a thin leaf of bone: hence termed exfoliation. The best treatment consists in assisting this process, and expediting the ultimate healing of the wound; both of these indications are accomplished by the application of an acid, and phosphoric acid is far better than nitric, as it does not cause an equal degree of irritation and pain to the soft parts, and certainly facilitates much more the separation of the dead from the living bone. I do not agree, therefore, with those who consider local applications as futile in such cases.

If exfoliation occurs in the flat bones, as in those of the skull, and through both tables, the reparation is very slow, requiring years to restore the lost portion, as these preparations illustrate.

Necrosis, or internal exfoliation.

Necrosis sometimes attacks bones idiopathically, or perhaps I should more correctly say, without any apparent cause, under favourable circumstances; the death of the bone is immediately followed by a reparative process, which may be divided into three distinct epochs:—

Separation of the sequestrum. Formation of provisional bone. Conversion of provisional into permanent bone.

The death of the bone extends sometimes only to a limited portion, while, in other cases, the whole shaft of the bone may die; the same process, however, results for the separation of the dead from the living part, for when it is said that the whole shaft of the bone is necrosed, as you are aware, gentlemen, the articular extremities are unaffected, and throw off therefore the dead portion. A line of demarcation forms where the dead bone terminates, disintegration and absorption take place, the living bone throws out granulations, and thus separation is effected between the living and dead structures.

The *sequestrum*, as the dead portion of bone is called, stimulates the surrounding parts, and causes them to effuse a quantity of lymph, which, in a short time, becomes converted into cartilage; ossific depositions next take place in this cartilage, and soon the whole is converted into a scabrous shell of bone, perforated generally by a number of openings for the exit of pus and earthy matter dissolved in it; for it will be found that 100 parts of necrotic pus contain 2.43 parts, by weight, of phosphate of lime, while in healthy pus, *pus laudabile*, there is scarcely a trace of bone-earth to be detected.

In these cases you will find injections of phosphoric acid, diluted in the same quan-

tity of water, highly beneficial to facilitate the removal of the sequestrum, by converting the phosphate into a bi-phosphate of lime, which is much more soluble, and therefore more readily acted on by the pus. I know it is the opinion of some authors that pus does not possess the power of dissolving bone, and they have quoted experiments in proof of their opinions; such as placing pieces of bone of known weight in pus and abscesses, and afterwards weighing them, without, as they say, being able to detect any loss; let them, however, try again, and employ for their experiments the pus resulting from necrotic abscess, and I think they will then change their opinions.

When the sequestrum is removed, either by force or by the process of absorption, the living extremities of the remaining bone throw out granulations which fill up the space within the provisional shell, and as it becomes converted into permanent bone the provisional bone begins to be absorbed, and is ultimately entirely removed, when the cure is complete. The same process you will find takes place in the union of a fractured bone, so that in either case you are not to suppose that reparation is perfected because a patient is capable of sustaining the weight of his body on a limb which has been the subject either of necrosis or fracture, for several months may yet be required for its perfect consolidation.

The constitutional treatment, during the progress of the death of bone, depends upon the peculiarity of the constitution of the patient, and the circumstances which induced the exfoliation. Usually antiphlogistic remedies are at first indicated; the investment of the limb in splints may be required to maintain the bone in a perfect state of rest, and the recumbent position must be strictly enjoined. Sedatives, combined with small doses of mercury, are generally required, also tonics to sustain the powers of the patient. If the disease depends upon syphilitic taint or malignant diathesis the appropriate remedies will naturally suggest themselves to the surgeon.

When the sequestra are large, they may require to be removed by operation, as too much time would be occupied in attempting to dissolve them by means of acids, and the continued purulent discharge would exhaust the patient's constitutional powers. Before any operation, however, is undertaken, you should be fully satisfied that the dead bone is perfectly loose, which may be ascertained by examining it with a probe, and judging by its extent of mobility. Having ascertained its fitness for removal, the object may be effected by cutting down through the soft parts to the bone, so as to lay bare an aperture in the new shell found around the dead bone, and if this opening be not

sufficiently large for the extraction of the sequestrum it must be enlarged by a small saw, trephine, or chisel, so as to admit a pair of strong forceps to seize the dead bone and draw it through the opening. Sometimes it may be requisite to use a pair of cutting-bone nippers to divide the sequestrum into smaller portions, and so to remove it piece-meal; but this will only be necessary when a large portion of the shaft of the bone has become necrotic. When, however, necrosis has extended to the articular extremity of a bone, and a joint becomes implicated, and when, at the same time, the powers of the patient have become exhausted by suppuration and protracted suffering, amputation of the limb becomes necessary, and care must be taken that, from anxiety to save the limb, life be not endangered by too lengthened attempts to cure the disease. It is to be borne in mind, gentlemen, that the diseases of the bones of the upper extremities are more readily cured than of the lower; so also we find that our prognosis in fractures is much more favourable when the injury is inflicted on the bones of the arm than of the leg, and, indeed, the same law holds good with respect to injuries and diseases of the soft parts, which evince a higher degree of reparative power in proportion to the proximity of the affected part to the heart's action.

This fact perhaps may be considered to apply only to those effects resulting from inflammation unaffected by malignant or specific constitutional derangement; for if the blood has become deteriorated by a specific morbid action, one would be inclined to believe that the progress of the disease would be more rapid as its situation approached the source of its nutrition.

VELOCITY OF THE ELECTRIC FLUID.

WE know of no fact which more strikingly illustrates the velocity with which an electric current is transmitted, than the following:—On New Year's Day 1845, at a few seconds after the year had commenced, a message travelled from Paddington to Slough apparently "in less than no time;" for it actually reached its destination in 1844! The difference of longitude makes the point of midnight at Slough a little *after* that at Paddington, so that a given instant which was after midnight at one station, was before midnight at the other. According to the theoretical velocity of the electric fluid, the time occupied in its passage from Paddington to Slough would not exceed the ten thousandth part of a second!—*Electric Telegraphs.*

A COURSE OF
LECTURES ON DENTAL PHYSIO-
LOGY AND SURGERY,

Delivered at the Middlesex Hospital School,

By JOHN TOMES, Esq.
Surgeon-Dentist to the Hospital.

LECTURE XV.—*continued.*

OPERATIONS ON THE TEETH.

WE will now consider how the operation of extraction is to be performed on the different teeth; and we will first take the incisors, canines, and bicuspid teeth, and afterwards the molares.

A section through the neck of an incisor of the upper jaw will shew that the anterior is larger, and forms part of a greater circle, than the posterior surface. Now the end to be attained in the application of forceps is to apply them over as large a surface as possible, that the pressure may be diffused, and the chance of fracturing the tooth by the pressure of the instrument avoided. To extract these teeth, therefore, the jaw to be applied to the posterior surface must have a smaller curve than that for the anterior. When the forceps are closed upon the tooth they should embrace not only the anterior and posterior surface, but a part of the lateral surface also. A cylindrical tube of thin metal, when pressed upon equally in every direction, will resist enormous force; but if the pressure be confined to one or two points, a comparatively trifling power will crush it: it is so with a tooth.

The lateral incisors require forceps made upon the same principles, but somewhat less in size. These are liable to greater variation in external dimensions than any other teeth. Sometimes they are very small indeed; at other times they are almost as large as the neighbouring teeth. It will be advantageous, therefore, to have different sizes of instruments from which to select.

The forceps having been well pushed up to the alveoli, and the tooth firmly grasped, attempt, by a firm and steady turn of the wrist, to twist the tooth in its socket, and, so soon as you feel it give, it may be drawn from its socket with little effort.

The incisors of the lower are smaller than those of the upper maxilla, and much more compressed laterally. Forceps for the extraction of these teeth will require to have the jaw which is to be applied to the posterior smaller than that for the anterior surface of the neck. The jaws of the instrument should be straight; but it will be found convenient to have the handles curved, so as to avoid the upper maxilla when the

mouth cannot be opened wide. When the tooth is grasped it must be forced outwards, accompanied with the slightest possible degree of rotation, and, when it is felt to yield, draw upwards.

The cuspidati require for each a pair of forceps made upon the same plan as those for the removal of the incisors, except that they must be larger and rather stronger. Those for the cuspidati of the lower jaw should, like forceps for the incisors of the lower jaw, have the handles slightly bent. Sometimes these teeth are very small, in which case forceps adapted to the adjoining teeth may serve for their removal. These teeth, whether in the upper or the lower jaw, may be detached from their membranous connection with the jaw by a rotatory movement, and then leave the socket readily.

The bicuspides will be extracted with instruments similar to those already described, except that there will be a little difference in the jaws, which must be accurately fitted to the neck of the tooth. These teeth are not very frequently liable to much variety in size, so that an instrument which is well adapted to an ordinary bicuspid tooth will apply itself to almost all. I have forceps in which the jaws are bent at right angles with the handles, and open laterally, for the extraction of bicuspides of the inferior maxilla. But they do not answer so well as straight instruments, it being less convenient to apply the necessary force, and more difficult to regulate its direction. In extracting teeth which have their fangs laterally compressed, and are placed in a row with other teeth of like-shaped fangs, the only available movement will be at right angles with the row, and in the direction of the greatest diameter of the fangs. This may be obtained whether the forceps be straight or rectangular; but with an instrument of the latter shape the movement must be effected by rotation of the wrist with a motion upwards. The centre of the rotatory movement will be either at the extremity of the jaws of the instrument, or else in a line with the handles of the instrument and wrist. Force applied in this manner would seem to be given at great disadvantage, and much expended on the alveolus; there inflicting injury, which, although in the vast majority of cases is scarcely complained of by the patient, prevents the mouth from so speedily recovering from the operation.

The bicuspid of the upper jaw have the necks compressed laterally. In removing them, whatever be the form of the instrument used, the force must be first applied in a direction outwards and at an angle to the dental arch. The tooth should be moved outwards and inwards, and then drawn downwards. But it must be borne in mind that in forcing it outwards or inwards we desire

Only to break its connections with the socket, and not to draw it out; and that if the force be continued in this direction with the hope of removing the tooth, that it will be broken off.

The bicuspsids of the lower jaw have more conical fangs than those of the upper, and hence may be detached by rotation, and then lifted out of the socket.

When I say rotation, I do not mean that the tooth shall be twisted a half or even a quarter turn, but that it shall be twisted till the attachments are felt to give way. If more force is required to effect this than you deem judicious to employ, then the direction of the twisting may be changed, or the movement abandoned. There are some teeth that vary so much from the usual form of root that they cannot be turned in the socket. The degree of force, in this and in all other cases of like operations, that it is necessary to employ, can be learned only in practice.

On extraction of the molares.—The molares of the superior maxilla have three fangs—two external, one internal. Of the two external fangs the anterior is the largest, and is placed in a plane external to the posterior fang, which is shorter as well as smaller. The third, the internal fang, is thicker and of greater length than either of the others, and is situated opposite to the posterior external fang, and the space between that and the anterior external fang. The divergence of the fangs takes place at the point where the tooth becomes concealed in the alveoli, leaving the neck with a form such as would result from the agglutination of the fangs, having the described relative position. (See Fig. 49.) At this point the forceps should be applied for the removal of the tooth. Instruments—for it will require two, one for each side, right and left—must be made upon the same general principles as those already described. The jaw for the external surface of the tooth must have two grooves—the anterior the larger, the posterior smaller, and upon a plane internal to the anterior groove. The jaw for the interior surface must have but one groove, and that fitted to the base of the internal fang. From the position of the molares of the superior maxilla, the jaws of the instruments for their extraction must necessarily be bent at an angle with the handles. This angle should not be more than is absolutely necessary, for the more the instrument deviates from straightness the greater is the difficulty of using it. The angle in my own instruments is not less than 135 degrees, and I think it would be better were it even larger. The handles should have a general curve in the opposite direction to the jaws.

FIG. 48.

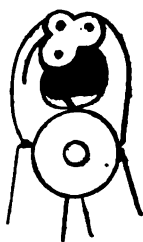


FIG. 49.

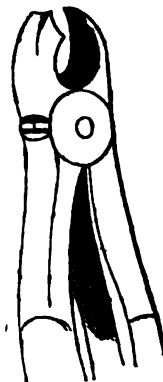


FIG. 48.—Forceps for extracting the upper molar teeth on the right side of the jaw.

FIG. 49.—Similar forceps, with the jaws embracing the neck of an upper molar, which has been cut through at that part to show the adjustment of the instrument.

The molares of the superior maxilla have the two external fangs parallel to each other in their direction in the alveoli. The internal, which is not only the largest but the longest also, diverges from the two preceding fangs, and passes upwards and inwards towards the internal wall of the antrum, and is enclosed in tolerably dense bone. The external alveoli are composed of thin and porous bone. In removing these teeth, then, the tooth being firmly grasped at its neck, the first motion should be slightly inwards, to disengage the fangs from the external alveoli. The force should then be directed downwards and outwards in the direction of the internal fang. If these precautions be observed, no difficulty will be found in removing the superior molares. The first and second molares of the superior maxilla are so nearly alike in size and shape that an instrument well fitted to one will serve equally well for the removal of the other.

The first molar, however, when left alone by the previous removal of the second molar and the second bicuspid, and the vacated alveolar have been filled with solid bone, offers great resistance to extraction, and is sometimes broken off in the attempt. Indeed, an isolated tooth surrounded by firm bone is always more difficult to extract, and requires more care than one of a continuous row of teeth.

In the third molaris, or dens sapientia, of the upper jaw, though the fangs are often united into one conical mass, yet the shape of the neck of the tooth is so like those of the

preceding teeth that an instrument which is suited for the removal of the anterior molares is often quite well adapted for the removal of the wisdom teeth. The *dentos sapientie* are, however, sometimes much smaller than the other molares; in which case a smaller instrument might be required, but that, when of small size, they are for the most part removed by the application of so slight a force that any instrument which can apply itself at all will serve for their removal.

The molares of the inferior maxilla having two fangs, and these being situated, with respect to each other, directly anterior and posterior, give the neck of the tooth formed by their junction a central groove upon the external and internal surfaces; and as these are the surfaces to be grasped by the forceps the jaws of the instrument must have a corresponding form. Of the fangs, the anterior is in each direction the larger, being both broader and thicker than the posterior fang. These teeth stand rather obliquely; while the external lateral surface, being larger than the internal, gives a line passing through the centre of the neck of the tooth from without inwards, a direction slightly backwards as well as inwards. From this conformation it becomes necessary to have forceps for each side, right and left. The jaw of the instrument to be applied to the inner side of the neck of the tooth must be rather posterior as well as smaller than that for the outer side, since the inner surface of the tooth is on a plane somewhat posterior to the outer surface. The jaws of the instrument must be bent at an angle of not

less than 135. The handles straight, or nearly so. I saw a pair of forceps something upon this plan, except that one pair only was made, and that equally applicable for the extraction of molares of the lower jaw of either side; the grooves in the jaws being exactly opposite to each other, and of equal size. The jaws were also bent at a right angle with the handles.

The *dentos sapientie* of the inferior maxilla, if situated on a plane with the anterior molares, may be removed with the same instruments; for although the fangs are often united in a mass of conical shape, yet the grooves on the outer and inner surfaces are marked. These teeth are, however, not unfrequently situated in the angle formed by the junction of the lateral and ascending rami of the jaw; in which case the forceps for their extraction should be shaped at the edge so as to fit into the so-formed angle, and made also with the jaw for the inner side of the tooth longer than that for the outer side, since, in such cases, the inner sides of the alveoli are on a lower level than the outer.

I should not neglect, however, to mention, that the handle may be made to hold various positions as regards the jaws of the instrument. Those given in the wood-cut will project from the anterior part of the mouth when the tooth is seized. But instruments may be had in which, when applied, the handles will project from the sides of the mouth. Mr. Evrard has recently made some instruments with these forms of handles, in the construction of which both ingenuity and good workmanship are shown. The forceps made by Mr. Evrard are far superior to any others I have met with; unfortunately they are obtained with difficulty, because he finds it necessary to finish each pair himself, and, therefore, can produce but a limited number. But to return for one moment to the subject in question. Every operator has his peculiar opinions as to what should be the shape and curve of the handles of tooth-forceps; and they may all be indulged, for so long as the jaws are well adjusted, the form of the handle is comparatively unimportant: they may be bent which way you will.

In removing molares of the lower jaw, the blades of the instrument should be carefully thrust down to the free edge of the alveoli, which part of the operation is easily effected in consequence of the decreasing size of the teeth from the crown to the fangs. Having obtained firm hold of the neck of the tooth, the first motion should be inwards, by which the tooth is detached from the external plate of the alveoli: this being done, the tooth should be forced outwards and upwards, and so removed. The fangs of these teeth have, however, not unfre-

FIG. 50. FIG. 51.

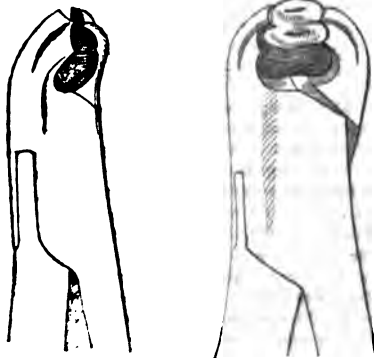


FIG. 50.—Forceps for extracting the molar tooth of the right side of the under jaw.

FIG. 51.—Similar forceps, in the grasp of which is a molar tooth cut off through the neck, to show the adaptation of the jaws of the instrument to the neck of the tooth.

quently a curve backwards; if, therefore, a tooth of this kind offers considerable resistance when its extraction is attempted, the movement, after the tooth has been forced laterally, should not be perpendicular, but in a curved direction similar to the inclination of the fangs.

Hitherto I have assumed that a considerable portion of the crown has remained, and that the tooth, therefore, could be readily grasped at its neck. But it often happens that the tooth has decayed away, or has been broken off even with or below the edge of the gum, in which case the instruments I have at present brought to your notice are inapplicable. We must use stump-forceps, or the elevator, to effect the removal of such teeth. There are two forms of stumps, single and double, or triple. Single-fanged teeth necessarily have only a single stump, but the molar teeth may have their fangs united by the neck. If the neck be destroyed, then the fangs will remain as so many single stumps. For the extraction of single stumps we require one kind of instrument, for double another, and for triple-fanged stumps a third.

In forceps for removing single stumps the jaws should be grooved to fit the stump, made very sharp at the edge, and of steel, so that the edge may be renewed from time to time on the oil-stone. When the instrument is closed, they hold the stump, and fit to its whole length.

FIG. 52.



FIG. 52.—Forceps for extracting stumps, with the jaws made so as to fit the stump throughout its whole length.

The general defect in these instruments is that they are not open enough near the joint, and the consequence of this is, that in closing they press on and crush the stump at its broadest and most fragile part, instead of em-

bracing it lower down in the alveolus, where it is sound and can resist pressure. The jaws of forceps for removing single roots must be similar in all cases, but they must be placed at different angles with the handles of the instruments to suit different parts of the mouth; and the handles themselves must, for molars of the upper jaw, be slightly curved. (See figs. 53, 54, and 55.)

FIGS. 53, 54, and 55.



FIGS. 53, 54, and 55.—Forceps with jaws similar to Fig. 52, but differently placed as regards the handles, to enable the operator to reach the various situations in which stumps may be placed.

The stumps of molar teeth of the upper jaw are often very firmly united by the neck of the tooth. In cases of this description, I have long been in the habit of using an instrument something like those described by Mr. Snell, but which I first saw in the possession of Mr. Rogers, who kindly allowed me to make a copy. One jaw is made to fit to the surface of the inner or palatine fang, while the other is formed into a sharp point, directed inwards, and destined to pass through the alveolus and between the fangs. (See fig. 56). In using these instruments you require a right and a left pair. The palatine jaw must be forced well into the alveolus of that stump, and the point brought opposite to the division of the two external fangs, and forced through the gum and alveolus in between them. Your grasp of the stump will then be so firm that by mov-

ing it laterally the fangs will become detached from the surface of the socket and be readily extracted; or else they will break apart, in which latter case each one can be readily extracted by forceps for single stumps. Before, however, applying these forceps, it is necessary to make a V-shaped incision in the gum over the external fangs with the specx directed upwards, into which the point of the instrument should enter, otherwise the gum might be torn.

FIG. 56.

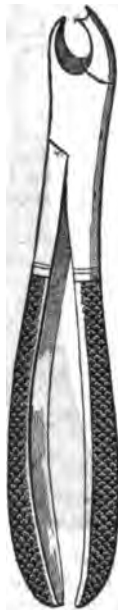


FIG. 56.—Forceps for extracting tri-fanged stumps. This instrument is for those on the right side of the upper jaw.

I need scarcely tell you that these instruments are only applicable to stumps of the first and second molars, and sometimes not to the latter. Stumps of the wisdom-teeth are generally removeable by forceps for single fangs, as they are not deeply implanted or large, or we may use the elevator.

The double stumps remaining from molars of the lower jaw require for their removal forceps the jaws of which terminate in points. This instrument must be used much in the same manner as the corresponding instrument for triple stumps of the upper jaw. The point, after the gum has been lanced, must be brought opposite to the bifurcation of the fangs, and, by closure of the handles, forced between them. This instrument may, when sufficient of the neck

of the tooth remains to direct the course of the jaws, be thrust down and closed, instead of being passed through the alveoli.

FIG. 57.



FIG. 57.—Forceps for extracting two-fanged stumps of the lower jaw, figured with a stump in the jaws of the instrument.

The elevator is the best instrument for removing stumps of the wisdom-teeth of the lower jaw.

I will now give you some account of this useful instrument, for the introduction of which into general practice I believe we are chiefly indebted to Mr. Bell.

The part applied to the tooth is in shape something like a spear-head. Two sharp edges meet in a point, the one side being flat or conical, while the other is rounded. The instrument is furnished with a good strong and large handle, and altogether is about five inches long. The edges and the point must be kept good by the frequent use of the oil-stone. Hence, it is convenient to have one surface hollowed, for then the edge can be renewed with less trouble.

The elevator may be used in two manners. The point may be forced into the alveolus, and then, by turning it towards the tooth to be removed, and making a fulcrum of the alveolus or an adjoining tooth, prise out the offending tooth much in the same manner you see a pavior raise a flag-stone; or the point may be stuck into the side of a stump, and by pushing it outwards in a line with the axis of the stump, force it from its socket. This latter plan can only be adopted when the stump is loose or the alveoli lowered by absorption, so that the retaining power of the stump is much diminished.

FIG. 58.



FIG. 58.—An elevator, with one side slightly grooved, to facilitate sharpening.

Where two teeth are standing together, either may be removed by forcing the elevator edgewise between them, and turning it when in that situation towards the one to be extracted. The round side will rotate against the one, while the lower edge will cut into and raise the other from its socket.

Teeth are not exempt from irregularities of form, which, however, are principally found in the fangs; one fang is divided into two at its apex, or is bent at its termination; yet even these varieties do not materially affect the shape of the neck of the teeth, which part is so uniformly the same that it is rare to find a tooth to the surface of which the described forceps will not apply themselves with tolerable and sufficient exactness. There are teeth, however, which deviate so much from the regular form, that no forceps, unless made for each particular tooth, would be well suited for its extraction, were it not that such teeth are generally small, and offer little resistance when their removal is attempted.

Irregularities in the shape and direction of the fangs, however, lead to serious inconvenience, and account for the occasionally unavoidable fracture of one or more fangs, or of the alveolus: and these are evils we cannot foresee. Thus, when fangs first diverge and then converge, they enclose a cylindrical piece of bone, which must be torn out with the tooth, or the tooth must be broken.

FIG. 59.



FIG. 59.—A tooth in which the fangs first diverge and afterwards converge, and thus enclose a piece of bone, which, on an attempt to extract the tooth, acts as a rivet, and must be torn away, or the fangs must break.

Then, again, fangs may diverge to such an extent that one of the fangs must be broken off, or a piece of alveolus must be detached when extraction is attempted. Sometimes

FIG. 60.



FIG. 60.—A tooth in which the fangs diverge to such an extent that its extraction could not be effected without either bringing away a piece of alveolus or breaking in the jaw one of the fangs.

a single fang will be bent almost in the form of the letter S, so that its extraction becomes almost impossible. Hence it follows, that however excellent our instruments, however skilful our operators, yet that teeth will now and then be broken off, and that portions of the alveoli will be detached with the teeth in performing the operation of extraction.

In describing thus cursorily the various dental operations, I have trusted to giving a general description of the principles which should direct your proceedings, rather than weary you with minute details of instruments and their use. These details you must deduce from a careful consideration of the form and position of the tooth to be operated on, and also from a diligent use of the experience your operations will place at your disposal. Three lectures, instead of one, might have been occupied on this subject, and even then have left some points untold. A minute description of mechanical

details would, not, however, have made you good operators. Careful and well-directed practice will alone give you dexterity.

In my next and last lecture I shall give you a slight account of the means we possess of replacing lost teeth.

Original Communications.

A COLLECTION OF FACTS ILLUSTRATIVE OF THE MORBID CONDITIONS OF THE PULMONARY ARTERY, AS BEARING UPON THE TREATMENT OF CARDIAC AND PULMONARY DISEASES.

BY NORMAN CHEEVERS, M.D.

[Continued from p. 756.]

ACUTE INFLAMMATION OF THE PULMONARY ARTERY (*continued*).

THE following case, by M. Bouillaud, affords a very remarkable example of acute inflammation of the pulmonary vessels occurring as a sequence of phlebitis in a distant part. There appears to be every reason to believe that the pulmonary artery of this patient was the seat of morbid inflammatory change. This is stated to have been so in the heading of the report*; but, by a singular oversight, no allusion whatever is made to the condition of this vessel in the detail of the case. I have thought it right, however, to quote this case, as, even if it be regarded merely as an instance of pulmonary phlebitis, it still tends to illustrate, in a very interesting manner, the pathology of the class of diseases now under consideration.

A vigorous man, *etat* 31, suffered from pains in the thighs, which were at first suspected to be neuralgic, but they were attended by strong febrile symptoms, and afterwards gave place to oedema of the lower limbs. He died of an acute pulmonary attack.

On examination, the heart was found rather contracted, its cavities containing fibrinous clots, in which no appearance of pus was discoverable. There was redness of the internal membrane of the auricles, particularly of the left; an uneven and tubercular state of the internal membrane of the aorta, without any trace of reddening. Many of the branches of the pulmonary veins were filled and obliterated by coagula of altered blood, which were friable and grumous, resembling the dregs of wine, with an intermixture of pus. In some of the obli-

terated veins liquid pus was found; in others concrete pus; in a third set a false membrane adhered very intimately to the interiors of the vessels. The venous tissues were evidently thickened. One of the veins which contained the false membranes appeared to extend to a purulent *dépôt* situated in the interior of the lung. On compressing the pulmonary tissue, small drops of pus and little cylinders of altered fibrine were forced from the extremities of the divided veins. The trunks of the pulmonary veins contained fluid blood, and their lining presented a redness similar to that of the left auricle, but without thickening of the venous tissues. In the left pleural cavity was found a large quantity of citrine serum, quite limpid, but the lower part of the cavity contained abundance of shreddy (fibrinous) deposit. The lung on this side was pressed towards the ribs, and, to a certain degree, atrophied by the compression of this effusion, and covered with false membrane, which was in some places adherent, in others loose; in some spots organized, in others amorphous. About a cubic inch of the base of this lung was occupied by a *dépôt* of matter resembling wine- lees mixed with pus: this cavity did not exhale a gangrenous odour, and all around it there existed very distinct vascular injection. The bronchial tubes and their branches did not present any morbid appearance. There was not any effusion in the right pleura; the corresponding lung was generally distended with blood, but remained crepitant. Towards its anterior edge it was marked with red spots of partial induration, and with perfectly circumscribed purulent deposits—lesions which exactly corresponded with those which it is usual to find in individuals who die after capital surgical operations. Carefully dissected, the portions of lung which were altered in patches, or small indurated masses, offered all the anatomical characters of incipient inflammation. The tissue was easily broken down, as in hepatization, and the smaller vessels contained fibrinous coagula. In every one of the indurated masses infiltration of pus had commenced. Only one of the purulent collections was situated somewhat deeply in the substance of the lung. The bronchial tubes on this side were normal. There was remarkable distension of the inferior vena cava, about the spot where it receives the hepatic vein, where it was filled with coagulated blood. The surface of the concretion which distended it was covered with a material which appeared to consist of blood mingled with pus. Upon the internal surface of the vein there was a false membrane more or less adherent, which, in the spots where it was examined, was white or yellowish, or more or less deeply discoloured by blood: it was of the

* The words used are, "Fausse membrane dans les divisions de l'artère pulmonaire."

consistence of the false membranes which were found in the pleura. The presence of this false membrane was the principal cause of the thickening which the walls of the vein presented. Similar lesions extended into the iliac veins, and throughout all the deep veins of the right lower extremity, many of which contained pure pus, but without appreciable reddening of their lining membrane, which was only less transparent than in the natural condition. Many small depôts of pus existed around the obliterated and inflamed veins. A very large abscess was found in the muscles of the calf of the leg. The nerves of the posterior part of the leg appeared to be hypertrophied. The subcutaneous veins were healthy. The veins of the left limb were less affected than those of the right, and were permeable, although the iliac vein on this side participated in the affection of the vena cava and of the veins of the right limb. The vena porta was healthy. Little purulent collections were found in the cellular tissue surrounding the bladder, and could be traced to adjacent divided veins. The bladder was contracted, and contained a very small quantity of urine, together with a remarkably elongated calculus developed upon one of the ends of a hair pin, which, in three-fourths of its length, was not covered by any earthy deposit. The lining membrane of the bladder was remarkably thickened, presenting spots of capillary injection, and a roughened and papillated surface. Upon compressing the kidneys urine mixed with pus escaped.* The liver was healthy; the spleen was softened: its substance, of a reddish-grey colour, broke down under the slightest pressure, appearing to be infiltrated with pus and blood.

Whether purulent absorption had or had not occurred in the above case, it appears evident that a destructive form of inflammation was directly propagated from the inflamed veins to the heart and pulmonary vessels and tissues. It is probable that the phlebitis originated in the veins of the diseased bladder; and the extension of the irritation from that organ to the kidneys may have been the circumstance which determined the occurrence of such extensive asthenic inflammation in a person whose constitution had hitherto been good.

In some observations which I published in 1841 on acute aortitis,† I had occasion to remark upon the tendency which the lining of the aorta has, in common with most of the true serous membranes, to

suffer from acute and sub-acute inflammatory changes in persons of shattered constitution and intemperate habits; and especially during certain stages of Bright's disease of the kidney. I then stated, and subsequent inquiry has confirmed the observation, that by far the larger proportion of cases of acute inflammation of the aorta occur in patients of this description, whose principal excretory and secretory organs have long been undergoing insidious morbid change. Acute aortitis is, however, by no means a frequent complication of renal anasarca, although, in cases of this description, the entire tract of the systemic arteries almost invariably presents manifest traces of sub-acute inflammatory lesion. As regards the pulmonary artery, I am not acquainted with any perfectly demonstrative case in which a patient, the subject of any form of Bright's disease, has died from acute and general inflammation of this vessel; although it is by no means unusual to find adherent coagula of recent formation in portions of the artery where death has occurred from renal anasarca and its complications. In the next chapter, however, I shall have to refer to numerous instances where an apparently less active or sub-acute form of inflammation was found to have invaded the pulmonary artery in persons suffering from morbus Brightii. At present, I must be content with stating my belief that the vessel is liable to be attacked with inflammation of the most acute character in cases of this description.* That such dis-

* The following is an interesting example of inflammation of the trunk of the pulmonary artery occurring in association with a certain amount of renal disease. The opinion that these lesions existed in the relation of cause and effect may perhaps not be generally adopted. It is true that the congenitally faulty state of the right ventricle and its appendages must have rendered those parts in some degree liable to suffer from further impairment in consequence of comparatively slight causes of constitutional or local irritation. Still, I am inclined to believe that the inflammatory mischief which was set up in this vessel almost immediately after the occurrence of an external injury, was very probably determined by the faulty condition of the renal apparatus.

A milk-boy, æt. 15, was admitted into the Royal Free Hospital, Feb. 20th, 1847. On the 12th he had bruised his left knee by a fall, and had since suffered from constant pain in that joint, and also, for two or three days before admission, in the right knee. On the day after the accident, he began to experience pain in the left side of the chest, and difficulty of breathing. When admitted he was much collapsed, and the extremities were cold and livid. The cheeks were of a deep purple colour, and the lips blue. The pulse was 124 in the minute, and extremely feeble. The tongue dry, and covered with a whitish fur. The respiration was peculiarly rapid and panting, and he was compelled to lie on the back, partly inclined to the right side, and with his head low. He complained of pain in the region of the heart, palpitation, and difficulty of breathing. Both knee-joints were swollen and tender, and there existed a red and swollen

* Unfortunately no further particulars are given respecting the true state of these organs; but the fact mentioned above goes far to prove that their pelvis, at least, were in an inflamed condition.

† Guy's Hospital Reports, vol. vi. pp. 312, 322.

case of the artery is apt to occur in persons of highly intemperate habits is proved by the following narrative. Nothing remark-

patch over the left trochanter. The respiration was puerile, and was attended with occasional mucous râles. As I shall have to refer to the state of the heart's actions, as ascertained by Dr. Peacock, in a subsequent part of this memoir, I shall omit them here. He gradually sank and died at eight o'clock on the following morning. The boy was much exhausted, and his intelligence so impaired, that it was impossible to collect from him any satisfactory account of his previous state of health. It was ascertained, however, that he had always been of a livid complexion, but was stout, healthy, and capable of a full amount of exertion, until February 1846, when he was thrown from a cart, and sustained concussion of the brain. He continued under treatment six days: the only peculiarity then observed in his appearance was slight lividity of the lips. Since that time he had been gradually getting thinner and weaker: he was constantly chilly, and very subject to take cold. He complained occasionally of palpitation, difficulty of breathing, and pain in the region of the breast; and his hands and face were always very blue, but especially so in cold weather, or when he was suffering from affection of the chest. His appetite was generally defective, and he occasionally vomited his food. His father is of a livid complexion, and has a "pigeon breast."

On examination, the brain was found healthy, though much congested. Both lungs were engorged with blood, sparingly crepitant, and contained several masses in the state of pulmonary apoplexy. The heart weighed ten ounces; the foramen ovale was closed; the sinus of the right ventricle was divided from the infundibular portion of that cavity by a thick muscular septum, defective only at its centre, over a space of sufficient size to admit the forefinger. The cavity thus formed communicated with the aorta by an orifice three lines in circumference. The infundibular cavity of the ventricle gave origin, as usual, to the *pulmonary artery*, the orifice of which was very small, and was provided with only two valves, which were extremely thick and opaque. The coats of the artery were much indurated and thickened, and its canal was entirely obstructed by fibrinous coagula. At the sides of the vessel these coagula were of a dirty-white colour, and were laminated and firmly adherent to the valves and diseased lining membrane; but towards its centre they were softer and less discoloured. The obstruction occupied the whole trunk of the vessel, and extended a few lines in each direction. The distal branches were free from disease. The ductus arteriosus displayed a conical cavity, extending two or three lines from the bifurcation of the pulmonary artery: beyond this it was impervious. The pulmonary veins were natural. The left cavities of the heart were small. The aorta communicated with the left ventricle by an orifice of about the same size as that by which it arose from the right ventricle. The aorta was large from its origin to the sulcus marking the attachment of the arterial ligament: from that part its calibre greatly decreased. Its valves and tissues were normal. The bronchial and œsophageal branches were somewhat large. One of the kidneys was somewhat mottled. It appears probable that in this case disease was set up in the malformed pulmonary artery shortly after the occurrence of the first accident, but there is every reason to believe that acute mischief again attacked the already faulty and obstructed vessel some days previously to the boy's death.—*Medico-Chirurgical Transactions*, vol 30, p. 132. I regret that I have been compelled to abridge some of the details of this important case, which, with the observations appended by Dr. Peacock, are of great interest.

able was observed in this patient's abdominal viscera, but it must be strongly doubted whether, in a man of his advanced age and irregular life, the kidneys and liver could possibly have retained their natural integrity of structure and function. A workman, æt. 65, who had always enjoyed good health, though a great brandy-drinker, had been affected latterly with cough and mucous expectoration, which, however, did not prevent him from following his occupation. After working one day in the water, he was seized with shivering, pain in the side, and dry cough. He tried some remedies at home, and then applied to Dr. Hankel. On the 2d of June, he presented the following symptoms:—His countenance was pale and disturbed; the eyes prominent and brilliant; a short and dry cough; pain, and a sensation of compression about the middle of the chest; there was pain from dyspnoea, particularly at night, preventing him from sleeping; continued thirst; anorexia; white tongue; hot skin; pulse 100; respiration accelerated; gait slow and insecure. He had been eight days affected in this manner. There was an increase of fever during the night of the 2d. On the evening of the 3d, the agitation of the patient was much increased; he had dyspnoea; frequent cough, without expectoration, and continual desire to pass water; the countenance was more fallen, and the pulse weaker. In the afternoon of the same day his agitation was redoubled, and he got out of bed several times: at five in the evening, his anguish was so extreme that he left his room, complaining in a tremulous voice of his painful state, and wished to move to a room in the upper story for the sake of fresh air; his wife hearing him go hastily up stairs, ran up after him: he had just time to throw himself on a bed, was attacked with a slight rattle, and died on the instant. On examination, the eyes that, during life, had been prominent were now sunken. The lungs (marbled white and blue) did not fill the thoracic cavity completely. They appeared to the touch engorged with blood. On cutting into them, there flowed a moderate quantity of blood not very deep-coloured; the tissue of these organs felt sufficiently elastic; there existed old adhesions at their lateral and posterior parts. The heart was not distended with blood; it contained some concretions resembling polypi, particularly in the right ventricle; the lining membrane of the heart, that of the arch of the aorta, and its valves, were healthy. The *pulmonary artery* contained similar concretions: one of them was remarkably large and firm, but did not adhere in any part. The parietes of this artery were of a uniform intense redness, as if they had been rubbed with black-cherry juice. This redness could

not be removed by washing, nor by scraping with the handle of a scalpel; it penetrated the whole thickness of the lining membrane of the vessel: the capillary vessels were not injected. This red tint did not extend to the right ventricle nor to the lungs. The other large vessels presented nothing similar. There was nothing remarkable either in the cranium or abdomen.* Notwithstanding the fact that, in this case, the coagula which were found in the pulmonary artery remained unadherent to the parietes, the character of the symptoms, and the absence of any very extensive inflammatory or obstructive lesions in the lungs and heart, appear to me to afford convincing evidence that the individual perished from acute inflammation of the vessel producing coagulation of blood in its interior, and consequently fatal obstruction to the pulmonary circulation.

Acute inflammation of the trunk and branches of the pulmonary artery occasionally presents itself as an idiopathic disease in persons of apparently healthy constitution who have suffered from exposure to cold and wet. It is probable that in such instances the disease partakes of a rheumatic character; it is true that, rare as it is to meet with the evidences of acute inflammation of the pulmonary valves in cases of rheumatic fever, it is still more unusual to observe either pulmonary arteritis, or acute aortitis, during the progress of that malady. It appears, however, that, in common with nearly the whole of the true serous membranes, the lining of the trunk and branches of the pulmonary artery is occasionally liable to become inflamed in persons of rheumatic diathesis. I shall hereafter have to cite a case illustrative of this fact. In the following highly interesting example the almost general inflammation which attacked the vascular system of the unfortunate patient was probably of a rheumatic character; but the details are not sufficiently precise to enable us to decide that such was certainly the case.

[To be continued.]

STRANGULATED FEMORAL HERNIA

OPERATED UPON WHILE UNDER THE INFLUENCE OF CHLOROFORM.

By R. A. STAFFORD, Esq.

Surgeon to the St. Marylebone Infirmary, &c. &c.

DEC. 3, 1847.—A lunatic (melancholia), æt. 57, has had femoral hernia for many years, and for which she has worn a truss. For about three days

she has been suffering from the symptoms of strangulation; but how long the rupture has been incarcerated cannot be ascertained. Her present symptoms are violent vomiting, extreme pain and tenderness of the abdomen, and no passage through the bowels. She has a tumor about the size of a small egg immediately under Poupart's ligament, in the space below the femoral ring. It is tense, hard, incompressible, and tender to the touch; and there can be no doubt that it is femoral hernia. The taxis, warm bath, ice, and all the usual means, were resorted to to reduce it, but with no effect. As the violence of the symptoms increased, Mr. Stafford resolved to perform the operation under the influence of the chloroform. The chloroform accordingly was employed, by pouring about a dessert spoonful of it on a sponge, and applying it to the mouth and nose. The patient breathed the effluvium, and in less than five minutes became under its influence. She was quite unconscious, and during this time an attempt was made (as in another case, under the ether, it succeeded) to reduce the hernia; but all the efforts to return the bowel were unavailing, the stricture of the femoral ring was so tight, that it would not go up. The operation was performed. The integuments were incised, the sac opened, and the stricture of the ring divided. The gut now easily receded, and was returned into the abdomen. The wound was closed by two ligatures and adhesive plaster, and afterwards a graduated compress of lint was placed upon the opening made, and bound down by a figure of 8 bandage.

During the whole of this time the patient was unconscious of what was going on, and felt no pain. When the wound was dressed she gradually recovered from her unconsciousness, and was told that all was over, and that the operation had succeeded. All she said was, that "she only wished (for that was her mania) that she had died." She was taken to bed, and being in an exhausted state no medicine was ordered. During the night the bowels acted of their own accord, and all the unfavourable symptoms gradually vanished. She has since been going on so well as not to require a single dose of medicine, and the wound is nearly healed.

* Archives Générales, August 1834; from Rust's Magazin, t. xxxiv. Part II. p. 244.

The chloroform in this case did not appear to leave any disagreeable effects behind, and the patient recovered much sooner than those who have had ether administered to them.

ON
SCROFULA:

A Paper read before the Brighton and Sussex Medico-Chirurgical Society, Oct. 7th,

By W. KING, M.D. Cantab., President.

[Continued from page 893.]

I SHALL NOW make a few observations which could not conveniently be classed under any of the above heads.

OBSERVATION I.—Parents may be scrofulous without apparent signs of it. The scrofula may be latent.

Two parents who appeared healthy lost three daughters of phthisis; they had another daughter who suffered from dysmenorrhœa, and another with scrofulous ophthalmia. It is impossible to suppose the parents to have been free from scrofulous taint.

Obs. II.—Parents may show no signs of scrofula till after they have had children.

1. A young woman became scrofulous at 26: a sister at 16: another at 14. The father shewed no signs of scrofula till he was 60, when he had tubercular glands of the neck, and died of them.

2. A man had ophthalmia and other scrofulous symptoms. He was the only survivor of eight children, most of whom died in infancy. The father did not appear scrofulous till he was 58, when he had a scrofulous ulcer in the neck, which killed him.

Obs. III.—Scrofula has been said to skip a generation, but it does not really do so; if it did it would be impossible for it to appear in the third generation, having no cause. It is only loose popular observations which suppose it to be extinct, and then to revive. It may be mild and latent in one generation, and severe in the next, and so appear to have vanished, but the taint must remain.

A grandmother and a granddaughter were scrofulous, and the mother in the intermediate generation was said, by her friends, to be healthy; but she

had small bones, large articulations, a sickly infancy, difficult labours, all of which are proofs of a scrofulous constitution.

Obs. IV.—During the wars of the French Revolution, when the conscription was at its height, France was so depopulated in men that every man capable of bearing arms was enlisted, and even many who were incapable. None were left at home but the sick, the infirm, and those who had married at 19, or even earlier, in order to avoid the conscription. Hence the population was kept up—1st. by persons too infirm for military service—2d. by sickly people—3d. by persons too young to produce strong children. These facts form a considerable portion of the Reports of the Secretary of War.

At the Restoration, in 1814, it was difficult, out of a levy of 80,000 men, to find 2,500 to form a corps d'élite, and it was necessary in order to obtain even this number to lower the standard of height. After the Peace of 1814, which restored the fathers to their homes, the conscripts were more numerous and robust. The conscripts of 1836 are still to be excepted, for they were born in 1816, in which year nine-tenths of the population suffered severely from famine.

Obs. V.—The end of marriage is domestic happiness, and the procreation of healthy children: and the former depends much upon the latter. The law is very particular about the forms of marriage, but totally indifferent about the results; the difficulties of regulating marriage physiologically by law seem to be insurmountable. The subject must rest with the parties and friends. Marriages can only become "rational," if we may use such a term, when the public shall have become rational and well informed, and willing to do what is right when they know it: we may suppose there are some such people in the world, however few. Indeed, all men profess to be ready to do what is right, and would be affronted if accused of making an injudicious or a foolish match. The intrinsic difficulties of the subject are not insuperable, because men daily make matches of convenience, and not of affection, and therefore they cannot accuse the physician of want of delicacy, or of impertinence, in exhorting

men to be governed by his axioms, when the health and happiness of both the present and future generations are at stake.

The fact is, that both the moral and physiological education and training of society is at a minimum. The knowledge of this art is not an instinct and self-evident, but one of experience, time, and science. The time for that science is not yet come, even to those who cultivate it, and much less to the educator and the parent, who only derive the knowledge at second hand. The practical difficulties of the subject are immense, for we have to deal with the young, and what do they care about knowledge? They care for nothing but instinct and feeling, and their fate may be described in the words of Cæsar, "I came, I saw, I married." And what is the result of this rapid evolution? a cripple or a fool.

Still we must labour on in hope, or even against hope, that knowledge will advance, that good principles will advance, and, in short, civilisation: for what is the merit of civilisation unless it be the progress of "good sense?"

Parents often oppose to the uttermost, and successfully, marriages which they disapprove of on the ground of rank or property. They might therefore just as well oppose unhealthy marriages, if they understood the conditions of health.

The Spartans, as is well known, though they did not regulate marriage, regulated its fruits by destroying the malformed and infirm children, and thus they secured in a great measure the healthiness of the race.

Oss. VI.—However men may affect to despise medical opinions upon this subject before marriage, they think very differently afterwards. Constitutional diseases not only produce unhealthy children, but they often produce disgust, aversion, and miseries between the parties themselves.

1. Two persons who had been impatient to be married were afflicted, one of them with constant discharge from the ear, which so disgusted the other that they separated in less than a year.

2. In another case of conjugal dislike, one of the parties went mad and committed suicide.

3. In another case, a young wife died of grief after enduring an ill-assorted marriage for seven years.

4. A mother who had been scrofulous when young, but apparently recovered, had three children. One was scrofulous. One died of phthisis. One was still-born. The mother lost her reason after the death of the child.

5. A lady married a man whose brother died of phthisis, and who was threatened with it himself. Her first confinement was a miscarriage. She had then two scrofulous children; and her anxiety and misery were so great, she said the death of her children would be a happiness to her.

Bordeu, who confuted the mechanical theory of Boerhaave, and laid the foundation of Bichat's theory of vital power, was of opinion that the best antidote to scrofula was early marriage. This opinion, in so clever a man, only proves the advance of modern physiology, and the multiplication of facts, and the more accurate observation, enumeration, and classification of facts. We see them more clearly, and disentangle complicated cases more thoroughly and successfully. That like should produce like, must be a universal axiom, otherwise there could be no inference, or deduction, or sequence, or proof, or argument, about any thing in the world.

I have often heard marriage recommended by medical men, not only as the fulfilment of natural desires, but as the strengthener of a weak, delicate, and even a scrofulous constitution. I think I am justified, upon the authority of the preceding review, in holding a totally different opinion. Physiologically speaking, it is the great altar upon which holocausts of morbid victims are offered up, not indeed to death, which would be a blessing, but to the perpetuation of a race which bears its curse in its forehead. Hundreds of wives have told me the same tale, "I have never been well since I married." Their strength gave way under the heat and burthen of the day. Childbearing and nursing demand more than a delicate and tainted constitution can bear. The elements of health are too many and too complicated to be often found united.

A lady was advised to marry by her medical attendant. She had six children. Two died early of scrofula; the

other four appeared likely to do the same. She then bitterly lamented the advice given her, and at last died herself of phthisis.

I have thus endeavoured, more briefly than could have been wished from the importance of the subject, to trace the history of the scrofulous constitution in its hereditary consequences, direct and indirect, and in its remote ramifications. I have considered it as a poison for which there may be palliatives, but no radical remedy, and that it affects, in different degrees, all who come into contact with it. I have also considered it as the source and principle of many diseases which have not yet been attributed to it. I have also endeavoured to show that, though scrofula cannot be cured where it exists, it may unhappily be originated where it does not, not only by the vices but also by the misfortunes of society, which misfortunes mankind have never been free from either in barbarous or civilised nations.

The view which I am obliged to take of this part of the subject is extremely imperfect, because I am debarred by the want of time from entering upon the moral considerations connected with it, and which are extremely important. Nor am I sure that such reflections might not be thought by others to be misplaced. In my judgment, medicine and morals have been unnaturally divorced. The moralist knows nothing of medicine and physiology, and the physician thinks morals to be out of his province. Both parties are mistaken, and both parties in consequence do their work imperfectly. It is here that the division of labour is an evil. Medicine forms a larger portion of the foundation of morals than either profession is aware of; and mankind will never attain to the little perfection they are capable of, even in this life, till the educator is both a moralist and a physiologist. A thousand millions of human beings walk upon the surface of this earth, with every capacity for moral and intellectual advancement and happiness; but, being committed from infancy into the hands of ignorant trainers, the masses are unavoidably devoted to crime and misery. And so they must continue till the moralist and the physiologist are alive to each other's merits, and willing to

co-operate for the common good of the world.

The conclusion at which we have arrived is neither agreeable to us as men, nor flattering to us as physicians; and our only satisfaction must be derived from conviction of truth. However unacceptable truth may be in particular cases, it is a fundamental axiom in the mind, that it is the most valuable of all possessions. It is, indeed, the constant pursuit of science to arrive at truth. Medicine being a practical science, medical truth is of daily application. She walks about the city and the country, always engaged in works of mercy. Her blessings are spontaneous, and never administer to avarice or ambition. She walks unwearied, and never slumbers nor sleeps: for when all the rest of the world is hushed in repose, the medical man rises from his couch, weary often with the toil of the preceding day, to wend his solitary way, not to the palace, but to the cabin; his only recompense being the *mens sibi conscia recti*. What shall support him at the bedside of the indigent sufferer but the love of truth?

It is difficult for a man to see the ground he stands upon; but the medical vocation is one of great privilege, and few people have more power of diffusing useful truths, in private intercourse and conversation, than medical men. If they cannot prevent scrofulous marriages, they may abstain from promoting them; and their conversations, partaking both of a medical and moral turn, may often do more good than they anticipate. I have had many opportunities of observing that a word, or medical maxim, dropped in season, has not been lost, but has been recalled to my recollection by the party to whom it was addressed years after it had been uttered and forgotten, as a proof that it had not been in vain. I have no doubt it is the same with others. The medical phrases which were in vogue some years ago, were adopted from the humoral pathologists of a former age, and they are now in a state of transition towards the organic phraseology of the present day; so that it is no uncommon thing to hear both the old nurse and the fine lady saying, that their mucous follicles are out of order.

But the greatest compliment which

has yet been paid to the medical profession, and its humane and scientific principles, is to see a whole Legislature, and every populous city in the kingdom, resolved to adopt them as a basis of civil polity, and to carry them out for the health, benefit, and happiness of the poorest and largest class of our fellow-creatures. This is an achievement of which medicine may well be proud.

[To be continued.]

THE SCOTCH EPIDEMIC FEVER OF 1843-4.

By JOHN RICHARD WARDELL, M.D. Ed.

[Concluded from p. 720.]

CASE XVI.—*Typhus succeeded (before leaving the wards) by the epidemic, of which the patient had three distinct attacks, before dismissal from the hospital.*

JAMES PATERSON, æt. 24, a baker out of employment, but not in want; moderately robust; is fully enabled to give a clear account of his illness, and was brought into the hospital by the police yesterday (Dec. 30th.)

Dec. 31st.—Is talkative and incoherent, but occasionally gives correct answers when put to him; no tendency to stupor. The surface is thickly spotted with an eruption, especially over the trunk, hypochondria, and epigastrium. Pulse 138, soft, not feeble, and of moderate size. Tongue dry, but clean. Has had two stools; does not complain of any pain.—Hæbeat. Vin. Rub. ʒiv.

January 1st, 1844.—Passed a quiet night, and reported to have had a good deal of sleep in the morning. Pulse 130; eruption much as before; tongue soft and moist; pupils of good size; thinks himself better; bowels open.

2d.—Eruption considerably faded; pulse 128, of good strength; much delirium during the night.

3d.—Has had no sleep during the night; has been constantly endeavouring to get out of bed, or be sitting up. Pulse 134; is stupid and obstinate, and will not answer questions when spoken to; pupils pretty large; bowels slow; eruption nearly gone.—℞ Sol. Mur. Morph. ʒj.; Vin. Antim. Tart. ʒj.; Aquæ Puræ, ʒij. Miscæ. ft. Mist.

ejus. cap. quartam partem statim et repetatur omni quarta hora. Eadem domestica statim injiciatur.

4th.—Pulse 124; tongue moist and soft; skin soft; eruption gone; is more inclined to answer when addressed; bowels opened twice by injection; slept only two hours, and was in other respects much the same as during the previous night.—Hæbeat haust. h. s. c. Sol. Mur. Morph. gt. xx.

5th.—Slept well after twenty drops of morphia in addition to his ordinary dose. Pulse 130, of fair strength. Over the lower third, on the posterior aspect of the left lung, there is dulness on percussion, and on auscultation a crepitant râle is heard. Intelligence still confused; skin hot and moist; tongue pretty clean and moist; eyes somewhat staring and expressive of anxiety.—℞ Pulv. Ant. Tart. gt. iij.; Aquæ, ʒvj. Miscæ. ft. Mist. cap. ʒss. q. q. q. hora. Emp. vesicator. lateri sinistro applic.

6th.—Slept well, and had no nausea or vomiting from the medicine. Blister has risen well; pulse 116, soft, and of moderate volume; respiration 30 per minute; skin hot, and free from eruption; still stupid and incoherent; has had one stool; unusual resonance of voice continues on the posterior aspect of left lung.

7th.—Pulse 74, of good strength; coughs more; percussion still abnormal at lower part of left lobe.

8th.—Pulse 70; respiration and percussion more natural; tongue moist and clean at apex and edges, and but little loaded on other parts; more intelligent, and slept well; no cough nor any other unfavourable symptom.

24th.—Continued to improve from the last report. For several days was walking about the ward, and yesterday while sitting at the fire was suddenly seized with a fit of shivering, and general and arthritic pains; was somewhat restless last night; to-day pulse 134, quick and soft; tongue white and loaded; bowels slow; complains of some pain in the head; expression somewhat confused, and appears as if startled and intimidated; skin hot and dry.—Hæbeat Infus. Cathart. statim.

25th.—Reported to have had considerable delirium during the night, having talked much but manifested no violence. Began to sweat about 11

o'clock to-day, and is now sweating very copiously. Pulse 180, pretty full; is at present incoherent, and is unable to answer questions; urine mixed with stools, and not seen.—*Habeat Vini Rub. ziv.*

26th.—It is not known how long he continued to sweat yesterday; skin hot and dry; pulse 120; urine passed to 16 oz. very thick and yellowish.

29th.—Sweated copiously during the night; pulse down to 80; skin cool.

Feb. 3d.—Has continued to improve since last report; appetite good; tongue whitish but moist; pulse 80, soft and regular; sweats a little at night. Had castor oil yesterday, by which his bowels were opened four or five times; urine not kept, but is voided in moderate quantity, and deposits a copious pinkish sediment; does not feel any confusion of head, nor has any drowsiness.

4th.—Last night was seized with chilliness and rigors, which were followed by flushings of heat; slept but little; no delirium, nor any confusion of intellect; pulse to-day 116, quick; skin hot; complains of slight frontal headache; tongue furred; bowels not opened since yesterday; urine passed to 36 oz. of a light reddish-brown colour, no sediment. Takes his food without relish.

5th.—Slept pretty well last night; had some sweating; no wandering; to-day pulse 154, soft and small; tongue white; no appetite for food; bowels opened this morning; urine excreted to 36 oz.; in other respects as yesterday; skin moist; answers questions intelligibly, and has no confusion of head.

7th.—Sweated a good deal the night before last; yesterday at visit his skin was cool and moist; pulse still frequent, but soft and regular; expression of countenance somewhat heavier than the day before; answers questions in a confused manner; no particular tendency to somnolency; urine all kept (16 oz.), sp. gr. 1026, with a copious pink sediment, disappearing on heating it gently near the point of ebullition; the urine becomes again slightly hazy, nor is the precipitation dissolved by the addition of nitric acid; bowels confined; tongue whitish.—To have a domestic injection immediately.

9th.—Sleep was somewhat disturbed

last night with dreams, and talked a little in his sleep; had some sweating; to-day skin cool; pulse 100, regular; feels well in every respect; quantity of urine cannot be ascertained, having voided it along with his stools; red deposit remains; bowels opened three times from injection.

This man had another relapse before leaving the hospital, making the third distinct attack of the epidemic subsequent to having typhus.

REMARKS.—In the first day's report of this man (Dec. 31st) he is said to be talkative and incoherent; and it is stated that the surface is thickly studded with an efflorescent eruption. On the 3d of January, 1844, it is seen that there had been considerable delirium; and from his obstinate taciturnity, it is obvious that his mental faculties were much impaired: and for other three or four days the intelligence was confused. On the 8th, being his tenth day in the hospital, was the time about which was the critical period: and if five or six days be allowed for illness previous to entering the institution (and such would be a fair estimate, as, in typhus, it was generally from four to six days before they came into the wards), the crisis would then be about the fifteenth or sixteenth day of the disease, and not on the seventh, as in the epidemic. Besides, we do not see that the transition from a febrile to a non-febrile state was so sudden and marked as in the epidemic, the change being far more gradual. From that time he steadily improved, and became so far recruited as to be enabled to walk about the ward. He was then again suddenly seized with shivering, and all the other premonitory symptoms of fever. At the expiration of five days, the febrile paroxysm was abruptly resolved by a copious diaphoresis. A non-febrile interval of six days ensued, when the accession of rigors, dry skin, heightened pulse, furred tongue, frontal headache, &c. demonstrated another repetition of the febrile state: and this paroxysm continued for four or five days, and was in like manner resolved. A third attack, characterised by the same phenomena, supervened, and in a similar way spontaneously terminated. This case affords the most distinct and indisputable evidence that

the two fevers were radically diverse. We never observe repetitions of typhus coming on in the manner described*, as by rapidly passing through a succession of febrile and apyrexial states, the paroxysms being abruptly ended by a powerful sweat; whilst the exanthematic eruption, the longer continuance, the less observable critical period, the gradual declension, &c. of typhus, broadly characterise it from the seven days' fever.

From the particulars set forth in the preceding tables and case, it would be difficult to arrive at any other inference than that the two forms were in their fundamental qualities unlike; that is, if we judge of causes by effects: and unquestionably in this kind of inquiry we can only determine of the occult nature of the former by the more manifest and cognizable characteristics of the latter. We have seen that the seven days' fever for a long period prevailed to a considerable extent, and that during its prevalence other contagious diseases scarcely at all existed, being exactly in accordance with what has long been observed relative to this particular law in febrile affections,—that in the decline of the one description another set in, spreading in the same districts, the same houses, and amongst the same individuals,—that having passed through the one form was no preventive, or rather perhaps predisposed to the other: and that many other unequivocal proofs were obtainable of the opinion now endeavoured to be maintained. It is before mentioned that the measly typhus in this part of the country† is never noticed. Within the last few weeks (July 1847) two itinerant Irish lads were reported to be ill in fever, and whom I visited. On examining those patients, I felt convinced that they had recently been at some large town where exanthematic typhus prevails. On inquiry, it was ascertained that they had come from Liverpool, and that they had been exposed to the contagion of malignant typhus in a lodging-house: and thus the apparent exception was at once accounted for. There are no reasons for believing that the exanthematic eruption is the inseparable concomitant

of a certain degree of malignancy, because although in this part of the country the spots are never observed, I have witnessed many of the very worst forms of the disease where the body has gone into the most putrescent state. Again, the Irish lads, although they presented a well-marked eruption, had the distemper in a mild manner; hence, it is unavoidable to infer that the poisons giving rise to continued fever vary in their essential properties.

2. The few remarks to be offered under this proposition can best be answered by a brief recapitulation of foregoing statements. *a.* Its accession was with greater suddenness than typhus; the latter generally coming on insidiously, whilst in the former scarcely any premonitory symptoms were given. *b.* The rose-red efflorescence never occurred in one single instance amongst the twelve hundred cases which I personally examined of the seven days' fever (which we know to be one of the most indisputable and distinctive diagnostic marks of real typhus), whilst in cases of acknowledged typhus, then in the wards, such was very commonly present: again, the livid petechiæ of the epidemic and the measly spots never simultaneously existed. *c.* Copious diaphoresis invariably at an early period resolved the one, while it did not the other; or, when it did appear in typhus, it was the sure harbinger of unwelcome symptoms. *d.* A considerable proportion of the epidemic cases became intensely jaundiced; in typhus, such but occasionally occurs. *e.* In the one they invariably relapsed without any exciting cause, often to the second or third, and sometimes even to the fourth time; each successive attack being distinguished by a repetition of primary symptoms, and the whole train of phenomena, as observed in the first febrile paroxysms: whilst in the other, such returns are but an aggravation of existent symptoms, very generally traceable to, and always produced by, some excitant cause, and not spontaneous repetitions of the primary febrile state. *f.* Not one single instance could be discovered in which a pregnant woman, labouring under the epidemic, did not abort, or was prematurely delivered; whilst pregnant females then in the wards, and

* See Paper No. VIII.

† Pickering, Yorks.

affected with typhus, went through their natural period of gestation. *g.* The mortality of typhus is generally twice or three times greater. *h.* The rapidity of convalescence in the one was much greater than that of the other. In typhus, the patient gradually improves, and the febrile symptoms disappear by degrees, often consuming a third of the whole time of illness; in the epidemic a few hours, or even less, sufficed to effect a total and unequivocal cessation of the febrile state. Contrasting these particulars the one with the other, in conjunction with additional statements which have been advanced in these papers, we cannot but arrive at the conclusion before contended for, that they were not identical.

Throughout the entire period of the epidemic visitation the fever preserved an evenness of character, without manifesting any variation in its leading features. The following, and last case to be given, is one that was taken about the decline of the distemper.

CASE XVII.—*Showing that the epidemic was characterised by the same symptoms at its close as at the commencement.*

Andrew Goodall, a weaver, æt. 20, a native of Selkirk, where he was exposed to the contagious influence of the epidemic. First began to feel unwell on Friday morning last (May 31st), having then had shivering, which was followed by pain and dizziness in the head, aching of the limbs, weakness in the inferior extremities, and loss of appetite. He walked to Gala-shiels that day, and on his journey he bathed in the Tweed; after which he fancied he was better for a short time, but during the night the headache increased, had much perspiration, and did not get any sleep. On Saturday morning took some Epsom salts, which did not operate until evening: the headache continued, and alternate chilliness and flushings were experienced through the night. On Sunday morning felt much pain in the chest upon taking a full inspiration; had much soreness over the body generally, but especially an aching pain over lumbar region: had frequent desire to void urine, which was passed in very limited quantity. He again passed a restless night, and perspired much.

Continued the same yesterday, but slept better last night.

On admission (June 4th), complains of an indistinct dull pain in the head, with great giddiness upon standing up or raising himself in bed. On attempting to move feels much soreness, and a sense of aching weakness over small of back and in inferior extremities. Pain in chest is now very slight, and can take a full inspiration with little sense of pain or tightness. Bowels soluble; tongue moist and clean at edges and apex, but rather dry and a good deal furred in centre; no sickness or vomiting; skin hot and dry; pulse 100, of tolerable strength.

6th.—Perspired a good deal last night, and towards morning slept soundly for some hours; urine passed copiously; bowels open; tongue more natural.

7th.—Slept well; tongue moist; bowels open; urine voided normally; expresses himself as being better; skin cool and moist; pulse 58, of good strength.

8th.—Slept well last night; bowels open; tongue cleaner; pulse near the natural standard.

9th.—Continues to improve: ordered common diet.

11th.—Dismissed cured.

REMARKS.—It is almost superfluous to offer any observations on the above example. The initiatory symptoms, as compared with those of No. 1, were very similar. On the morning of the 7th day, the critical sweat supervened which effectually resolved the febrile paroxysm. He left the hospital after having been an inmate for a week, and although he had no return of the fever whilst in the institution, it is highly probable that he would have a relapse after dismission, which was frequently the case when the patients were discharged early.

Such is the account which it has been endeavoured to give of the Scotch Epidemic Fever of 1843-44, and I humbly think that the impartial reader must needs arrive at the conclusions which have been maintained in the foregoing pages—viz. that the leading and characteristic features of the distemper were peculiar and unexampled. Those, perhaps, whose experience has been more ample may find some points of objection; in the main, however,

by rigidly adhering to facts, as noticed by constant personal observation, I trust that the views taken will not be deemed altogether incorrect. I must apologise to the readers of this journal, for having been more diffuse than might be desirable, but when it is considered what diversities of opinions there are, relating to many subjects connected with the disease, and how many considerations there are demanding some degree of attention, to be intelligibly concise is more difficult than may be generally imagined. If the deductions which have been advanced do not coincide with the opinions of all, the data which were carefully amassed from many hundreds of cases cannot fail to be of value whatever theories are espoused or doctrines maintained, and thus in conclusion may be cited the words of Rousseau, adopted by Dr. Cormack as the motto to his work on the fever—"I know that the truth is in the facts, and not in the mind which observes them."

A CASE IN MEDICAL JURISPRUDENCE.

EVIDENCE OF LIVE BIRTH IN CASES OF SUSPECTED CHILD-MURDER.

By JOHN DAVIES, M.D.,
Hertford.

ON Saturday, the 27th November, an inspector of police brought me the body of a foetus; it was in a paste-board box of small size, with the lid turned inside out, and on the top there was a quantity of mould. The body was found buried in a garden. It turned out on inquiry that there had not been exactly a concealment of birth on the part of the mother, who was an unmarried woman.

The body was thirteen inches long from crown to sole; eyelids were adherent; testicles (it was a male child) had not descended; it weighed one pound and three-quarters. It was ascertained that it had been buried a fortnight, which accounted in some degree for the lightness of its weight in proportion to its length, and for a slight peeling off of the cuticle from some parts of the arms; the body looked otherwise healthy. I guessed

the age to be between six and seven months; probably about seven months.

On examining the lungs, I found them to be quite firm, like liver; they sank in water, both wholly and in parts. The right lung was of a dark brown mahogany colour, but the upper lobe of the left was of *rather a lighter colour* than any other part of the lungs. However, this lobe sank immediately upon being put in water.

Now the evidence at the inquest proved that the child was not only *born alive*, but that it lived *ten minutes*, or longer, after birth. It appeared that an elderly woman, living close by, was sent for, and when she arrived she found the child, with the placenta attached to it, in the close stool. She noticed that the child moved its arms; she therefore took it up, with the placenta, and wrapped it in flannel. It continued to move its limbs for *ten minutes*, according to her account, *but it uttered no cry*. When the child ceased to move, she divided the *fœtus* seven inches from the body, and tied it into a knot, the state I found it in.

It is desirable to record cases of this kind, though such have been already published. I have noticed in two instances of abortion, about the fifth month, that the child showed signs of life after its birth by moving its limbs.

Hertford, Nov. 29th.

. This case is of some interest, because it shows that the sinking of the lungs in water, either wholly or divided into parts, is not an absolute proof that a child has been born dead.

PRESENTATION OF A TESTIMONIAL TO MR. EDWARD COCK.

ON Friday last, a numerous body of the friends and pupils of Mr. Cock, surgeon to Guy's Hospital, assembled at the London Tavern, Bishopsgate Street, for the purpose of presenting a testimonial to that gentleman, as an expression of the esteem and gratitude which he has gained during his career of twenty years as an anatomical teacher. The presentation was accompanied with the warmest expressions on the part of the meeting of their cordial appreciation of Mr. Cock's high professional attainments and sterling moral worth. Mr. Cock replied in a most feeling and eloquent speech.

The testimonial consists of a silver salver, of the value of one hundred guineas.

MEDICAL GAZETTE.

FRIDAY, DEC. 10, 1847.

ALTHOUGH the extent to which the epidemic influenza has prevailed in the metropolis is not indicated by the number of deaths from this cause, in the week ending November 27th, yet its fatal after-effects are sufficiently apparent in the large and sudden increase in the mortality from diseases of the lungs. From a weekly return of only forty above the autumnal average, the number of deaths suddenly advanced to 631 above the average! The cause of this great increase is referable to two classes of diseases:—the zymotic class and those which affect the organs of respiration. In both cases the mortality has been doubled.

	Weekly deaths Aut. average.	Deaths in week ending Nov. 27.
Zymotic diseases	211	415
Diseases of the lungs	333	634

The young have been the chief sufferers, as the following table will show.

	Under 15.	15 to 60.	Above 60.
Deaths from zymo- tic diseases	278	90	47
Diseases of the lungs	251	241	142
	529	331	189

The deaths from small-pox, measles, scarlet fever, and hooping cough, are above the average in each disease: but the most fatal appears to be measles, as a result of which 96 deaths are recorded to an autumnal average of only 36, and, with one exception, the whole of these deaths occurred at the infantile period of life. Under influenza are numbered 36 deaths to an autumnal average of 3: and 23 of these occurred in persons above the age of 60. Typhus has not diminished in fatality;

there were 87 deaths to a weekly average of 36, and more than one-half of these occurred between the ages of fifteen and sixty. With respect to cholera not a single case is recorded; and of diarrhoea there were only 29 deaths, one-half of which were among infants.

The sudden increase in the weekly mortality, however, has been chiefly due to diseases of the lungs: and of these bronchitis has been exceedingly fatal to persons of all ages.

	Weekly deaths, Aut. average.	Deaths in week ending Nov. 27.
From bronchitis	39	196
From pneumonia	109	170

and taking the deaths according to age, they stand as follows:—

	Under 15.	15 to 60.	Above 60.
Bronchitis	80	55	61
Pneumonia	137	20	13

In a meteorological point of view, the week is remarkable for the very large amount of rain which has fallen,—for the very sudden and extreme changes in temperature, as well as for the rapid fluctuations in the barometer. We fear there will be no diminution in the great amount of mortality until the weather has become settled, and is more in accordance with the season of the year.

From the return just issued for the week ending December 4th, the deaths in the metropolis have exceeded the autumnal average by the large number of 1408, or 134 per cent.! Of these, there were 1141 males, and 1313 females, making a total of 2454! We must reserve our analysis of this return until next week.

We are called upon almost weekly to record some act indicative of the ill-treatment of medical witnesses at coroners' inquests. A medical man happens to be present at a death into the cause of which, it is considered necessary to institute an inquiry. His services are dispensed with at the

inquest because his attendance would add the cost of a fee to the county rates: and a verdict is returned in his absence upon an *outside* view of the body. The supposed cause of death may be a lucky conjecture on the part of the jury: it is entered in the reports of the Registrar-General, and may become the basis of important statistical inquiries, as setting forth the increased mortality of diseases of the heart or lungs, the prevalence of apoplexy, the wide diffusion of "temporary insanity," or the influence of "natural" but mysterious and unknown "causes," by which all persons in a state of health are liable to be suddenly cut off, and for determining the exact nature of which many suppose the coroner's inquest to have been instituted. In our number for November 5th*, we inserted a letter from Mr. Embling, complaining that a verdict of natural death had been improperly returned at an inquest upon the body of a woman who had been brought to his surgery in the evening, and had died there after two hours of severe suffering. He was not summoned by the coroner, and, in the absence of any medical evidence, and without an inspection of the body, it was settled by the coroner and jury that this woman had died from "natural causes." The jury may have been right in their conjecture, but the frequent exhumation of dead bodies in similar cases, has proved them to have been so often wrong that we consider the saving of two guineas to be dearly purchased in any case really demanding inquiry, by the risk incurred of concealing death from violence. It is in all cases a most disgraceful system of economy, and one that necessarily tends to the defeat of justice. Blackstone and other legal writers tell us—and the sentiment is frequently expressed in the charges of our judges—

that in this great and gloriously free country, the death of the meanest beggar is as strictly inquired into as that of the noblest subject of the land; so that he who has taken life, cannot hope to escape the retributive power of the law! We wish we could bring ourselves to believe that this statement was true. As humble recorders of passing events, however, we find it completely opposed to facts; for the preliminary inquiry into the cause of death at inquests, is conducted in so slovenly a manner, that murder is either concealed, or, if brought to light by circumstantial evidence, the hand of the law is arrested by the want of sufficient medical proof.

How very easily murder may be concealed by such a system, and how readily the "meanest beggars" may be put out of the way by strangulation, will be sufficiently apparent by reference to a case quoted in the 37th volume of this journal*. A woman was strangled, and the coroner and jury settled, without medical evidence, that the deceased had committed "suicide under temporary insanity." For two guineas he might have had evidence which would have proved to him that a murder had been committed; but the desire to economize, and to advance to troublesome medical witnesses, no more fees during the quarter than he could possibly avoid, induced him to dispense with medical evidence altogether. He, however, had subsequently to appear at the Central Criminal Court as a witness against the accused, who was convicted of and executed for the crime,—and to disavow the suicide and temporary insanity. Here the crime of murder was brought to light, and the murderer punished, in spite of the obstacles thrown in the way of detection by a false verdict returned upon no medical evidence at a coroner's inquest. This

is not a solitary instance; but it shews in a most striking point of view, the inefficiency of the present mode of inquiring into the causes of death.

That the hand of justice is frequently arrested by this shabby economy, will be evident from the three following cases which have occurred during the present year:—

1. A man named Simm was tried at the Newcastle Assizes on a charge of manslaughter. He had quarrelled and fought with the deceased: the latter received a severe blow on the side of the neck, fell to the ground, and soon afterwards died. At the inquest there was no post-mortem examination, so that, at the trial, there was no conclusive evidence of the cause of death. Mr. Justice Wightman stopped the case, and "commented in somewhat severe terms on the ill-judged economy *which had left the case incomplete, to save the expense of a post-mortem examination.*"

2. A case very similar in its circumstances was tried before the Lord Chief Baron at Lancaster. Mr. Bell, surgeon, of Garstang, on being examined as to the cause of death, admitted that he could not certainly say that the violence which appeared outwardly on the head and neck of the deceased had occasioned death, and it would have been better if there had been a *post-mortem* examination. There was none, however, because the relatives did not desire it, *and the coroner had not thought it necessary.* Owing to the uncertainty of the cause of death, his Lordship directed the jury to acquit the prisoners.

3. Another man was charged before the same judge with the manslaughter of an aged woman, upon whom he had inflicted severe personal injuries.

Mr. Bell, who also gave evidence in this case, "stated that he had reason to suppose that death was caused by the injuries. Deceased had previously been ill, but had recovered before she

received them. He could not, however, speak with certainty, which perhaps he might have done if a post-mortem examination had been permitted. But *the coroner had declined to grant his warrant for that purpose, as he thought the case was not one requiring it.*"

The judge directed an acquittal of the felony, as it appeared uncertain from what immediate cause the death had proceeded. He observed, "that the coroner, who filled a high office, was wrong both in law and fact. *A warrant ought to have been granted, and that for the sake of the prisoner, as well as for the purposes of the prosecution.*"

In these three cases we have surely enough to show, that, by ill-judged economy, in declining to order post-mortem examinations, a coroner may really be the means of obstructing the course of justice. The mischief is, that this officer is made by law a money-lender to the county; and his accounts are closely examined by the magistrates in Quarter Sessions, some of whom steadily refuse to allow extra-fees, and even object to the Parliamentary fees, in cases in which a full medical inquiry is imperatively demanded.*

Bad as this system is, inasmuch as it confers impunity on crime, it is not so injurious to the profession as the practice of summoning a medical man, procuring from him all the professional evidence required for the verdict, and then upon some frivolous technicality declining to pay him the small and inadequate fee which the law allows. On this part of the question, we propose, to offer a few remarks next week.

* Since the decision given by Lord Denman last Trinity term, (see page 1040) coroners are not justified in thus shabbily excluding medical evidence. Magistrates cannot disallow payments made to medical witnesses *bond fide* for fees allowed by Act of Parliament.

WHILE there are such loud complaints respecting defective drainage, untrapped cesspools, and the private accumulations of ordure in the narrow lanes and passages of the metropolis, it appears that there are individuals who are disposed to turn an honest penny by concentrating the nuisances of ten or twelve parishes upon one small spot. We elsewhere* reprint from the *Times*, a report, which will show to what an extent an evil of this kind may be secretly carried, and how much the health of a neighbourhood may suffer, before any legal steps can be taken for its effectual suppression. The accumulation of some hundred tons of fæces, blood, and offal, under a shed, freely exposed to air, and near to inhabited dwellings, is described "as a scientific and useful manufacture;" and although it was sworn that the pauper inmates of a neighbouring workhouse had been cut off by fever and diarrhoea in an aggravated form, it was coolly argued that the dealer in pestilence would be ruined, if an immediate removal of the nuisance were ordered. The magistrate very properly declined to listen to the absurd argument, and made an order for its removal.

A Mr. Wicksteed, described by the reporter as a practical chemist, appeared on the part of the pestilencemonger, and deposed that if the whole mass were covered with three feet of earth, and a stratum of sulphate of lime superimposed, "the escape of any volatile gases would be entirely precluded," &c. We decline accepting this specimen of practical chemistry. As long as earth and sulphate of lime are porous, they will easily transmit gases. Such a plan would therefore lead to only a partial abatement of the

nuisance; when there appears to be no reason, except that which concerns the pocket of the "scientific" proprietor, why persons living in the neighbourhood are to submit to the nuisance in any degree whatever. If it had not been for the injury likely to accrue to the health of those not concerned in the dirty speculation, we think the magistrate would have done wisely had he followed the advice of the "practical chemist," with the understanding that he and the scientific manufacturer should reside on the spot. The chemical theory of fixing the foul gases, would have thus been put fairly to the test.

In the absence of a sanitary measure, in the increased mortality from zymotic diseases, and in the anticipated approach of a disease, the fatality of which is always aggravated by decomposing animal and vegetable matter, we have sufficient reasons for asserting that the provisions of the Contagious Diseases Prevention Act should be rigorously put in force against the whole tribe of "concentrated manure manufacturers."

Since the above remarks were in type, some observations condemnatory of this commercial nuisance have appeared in the *Times*. We agree with the remarks of our contemporary with one exception; he is disposed to censure the medical officers for "a neglect of duty" in not previously bringing the evil under the notice of the authorities. We do not comprehend why the office of searching out and prosecuting nuisances, should be regarded as appertaining to the duties of parochial medical officers. As it is, the Contagious Diseases Prevention Act awards no fees for the loss of time and professional practice which the laying of such informations must occasion; and the medical officers of Unions are badly enough paid for their official labours without

* Page 1038.

having more work gratuitously thrust upon them for the benefit of the public. We would suggest that the City solicitor and his deputies should take a turn in a charitable office of this kind, and come forward as informers. It is true there is no fee, but they would doubtless feel themselves amply rewarded in the knowledge that they were averting a foul pestilence from the dwellings of their pauper fellow-citizens!

A RUMOUR has been circulated within the last few days, that the Asiatic cholera has made its appearance in the metropolis, and that it has proved fatal in two cases in the borough of Southwark. From inquiries made among the leading practitioners of the district, we find that the rumour is without any foundation. It was reported some weeks since that the disease had broken out in Paris, but the statement was proved to be incorrect. It has been uniformly observed in the progress of cholera, that false reports of its appearance in populous cities, have for some time preceded its actual visitation.

PETITIONS TO PARLIAMENT ON SUBJECTS CONNECTED WITH MEDICAL LEGISLATION.

WE take the following from a report of public petitions presented to Parliament during the last session:—

	Petitions.	Signatures.
For the repeal of the Anatomy Act.	35	8,957
For restricting the sale of poisons	1	19,955
For regulating the qualifications of chemists and druggists	298	10,850
Health of Towns, for sanitary regulations	14	1,773
— Bill against the	22	334
— in favour of	306	40,985
— for alteration of	36	5,948
Medical Registration, and Medical Law Amendment Bill—Against	16	85
— In favour of	40,954	22

Deafness.

Deafness Practically Illustrated: being an Exposition of Original Views as to the Causes and Treatment of Diseases of the Ear. By JAMES YEARSLEY, M.R.C.S.E. &c. 8vo. pp. 181. London: Churchill. 1847.

THE author observes in his introduction that his object has been "to prove in the present treatise that, in nine-tenths of the cases which come before the practitioner, deafness will be found to have originated in a morbid affection of the mucous membrane lining the throat, nose, and ear. The latter is reached through the medium of the Eustachian tube; and, according as the disease terminates in simple thickening of the mucous membrane, in adhesions, in partial or total loss of the membrana tympani, in disorganization of the whole mucous lining, in loss of the ossicula, or of the inner membranes of the fenestræ, so is the deafness more or less intense and confirmed." A careful perusal of the work has convinced us that, upon the whole, the author is correct in his views relative to the influence of disease of the mucous passages in producing a large proportion of the cases of deafness not dependent on congenital defect; his experience of the subject appears to have been ample (a fact which his readers are never allowed an opportunity of forgetting as they proceed from page to page of the treatise), and his powers of observation and research have been by no means inferior to his opportunities. The treatise is addressed to the public as well as to the profession, and although it of course contains many details in which it is by no means requisite that the former should be instructed, it comprehends some useful observations on prophylaxis, together with a well-written chapter on "The best means for Compensating for Incurable Deafness," which are decidedly worthy of perusal by those in whom deafness is threatened or confirmed. Mr. Yearsley seems to have paid considerable attention to the diagnosis of diseases of the ear: apart from the slight degree of flourish with which they are introduced, a few of his observations on

this subject are of value, and may interest our readers.

"The less informed practitioner of aural surgery directs his chief attention to the state of the external auditory passage; and should there be no manifest sign of disease, if neither malformation of the meatus, nor discharge, vitiated secretion of wax, nor structural alteration in the membrana tympani, &c., exists, he decides the case to be one of nervous deafness, and applies his remedies accordingly. The more accomplished observer goes much further than this; and before deciding that a nervous affection is the cause of deafness, besides satisfying himself of the non-existence of extreme disease, he is enabled, by the aid of an improved surgery, to explore the internal ear with as much certainty as the external passage, and assures himself that both the tympanic cavity and the Eustachian tube are free from lesion. This can only be done satisfactorily by means of catheterism, and by applying the principles of auscultation to the ear. After introducing the catheter, and ascertaining the freedom of the Eustachian tube, we may, by the cautious admission of air into the tympanum, and examination of the sounds it produces by means of the stethoscope, diagnose the condition of the tympanic cavity with as much certainty as that of the lungs or heart. In the words of Kramer, 'When the tube and cavity are free, the air strikes against the membrane of the tympanum. When the shock is over, a slight blowing or rustling in the ear of the patient is heard, caused by the streaming of the air.' Inasmuch as the deviation from these the natural sounds becomes apparent upon the application of the ear-douche, are we to compute the alteration in the cavity of the tympanum from the normal state. When an examination conducted on these principles has shown not only the external ear to be in a healthy state, but also that the internal parts accessible by the Eustachian tubes are free from diseased action, we may with safety infer that when deafness exists it must depend on the state of the nerve, or of the labyrinth which contains its expansion. There are other means of diagnosis of more easy application than those described, but which are scarcely less worthy of the attention of the aurist. When deafness arises from imperfection in any of the conductors between the air and the nerve itself, there are certain conditions under which sounds continue to be recognised by the nerve of hearing. Thus, extensive disorganizations of the tympanum and its contents, or of the external meatus, may exist, and yet, so long as the nerve remains uninjured, the ticking of a watch continues to be heard distinctly when

held between the teeth; because, although the ordinary path for the transmission of sound is obstructed, sonorous vibrations are conveyed to the nerves through the medium of the teeth and bones of the cranium."

* * * * *

While the nerve of hearing remains sentient, a deaf individual can perceive noises made on the floor on which he stands; the solid parts generally of the body acting as conductors. He can also distinguish noises in the intestinal canal, arising from flatulence, the conductors of sound being in this case similar. Another means of assisting the judgment to a conclusion, when inquiring into the cause of deafness, is the manner in which the deaf individual hears his own voice. If the deafness arises from diseased action of the nerve, the patient's own voice is as inaudible to him as any other sound; but if obstruction of the Eustachian tube occasions it, the voice continues to be heard. These indications, even considered singly, are of great value in establishing the true nature of deafness; but taken collectively, they can hardly fail to lead a diligent observer to right conclusions with regard to the absence or presence of disease in the auditory nerve. Persons affected with deafness as a consequence of torpor of the auditory nerve, generally hear better after they have been exposed for some time to loud voices; probably the loud sounds excite the torpid nerve, and, for a while, until the excitement has subsided, the hearing is perceptibly improved. One symptom, which has been insisted on by writers upon the ear—namely, tinnitus, is of small value in estimating the causes of deafness, being occasionally present in the most varied affections of the organ of hearing. The same may be remarked of the ticking noise so frequently heard by deaf people, and which has been recently accounted for by attributing it to contractions of the tensor muscle of the tympanum, which is most probably itself a cause of deafness when it occurs. In cases of true nervous deafness, it is rare to find one ear suffering alone, if the hearing has been for a long time impaired. The remarkable sympathy of action which is observable in health between the optic and auditory nerves of the two sides of the body, and which contributes in an especial manner to the harmonious exercise of their functions, comes into operation in cases of disease, so that a diseased state of the organ on one side of the body rarely fails, when long continued, to impair the energy of its fellow on the opposite side. This is an undoubted fact, and should induce those affected with deafness on one side only, to seek efficient aid before such a result has supervened. The hearing on one side may continue tolerably good for many years, but it is invariably more predisposed to disease

from the malady affecting the opposite organ."

Recollecting the celebrity which the author has attained for the removal of enlarged tonsils in cases of "throat deafness," we of course felt anxious to ascertain whether he still maintains the necessity and efficacy of that practice as energetically as heretofore. He evidently does; for we find him remarking that he has "now removed upwards of 2000 morbid growths from the throats of more than 1400 patients, variously afflicted with the ailments to which these enlargements give rise . . . without one failure or accident." We trust that the author also feels able to add—and with absolute certainty of the propriety and necessity of the measure. It must either be that the tonsils are very nearly as liable to a condition of enlargement, subject to no other control than that of the knife, as the teeth are to a species of caries which absolutely calls for the employment of the forceps; or that all the unfortunates in England suffering from enlargement of the tonsils, must have rushed to the author for the purpose of having the unseemly growths scientifically pared away. We must confess that we should have been more convinced of the utility of the operation if the author had not boasted of having employed it with what we cannot but suspect to be such indiscriminate frequency.

The author entertains strong objections to the employment of *mercury* as a constitutional remedy in cases of deafness. He observes—

"If I were asked to name, in the order of their frequency and importance, the chief causes which give rise to the condition of mucous membrane and subsequent loss of hearing which I have described, I should thus place them:—1, cold; 2, the exanthemata; 3, dyspepsia; lastly, mercurial medicines. Some of the extreme and most unmitigable cases of deafness I have ever witnessed were produced by severe salivation; and I must confess that I never saw a case of this kind, of any standing, which derived decided benefit either from local or constitutional treatment. If there is in the *materia medica* a medicine which has the power of acting as a poison to the sense of hearing, where there exists predisposition to deafness, I believe it to be *mercury*. Of course my strictures are directed not so much against its exhibition as a purgative or alterative,—though even here it is dangerous to the deaf,—but

when given with a view to its *specific* effect. From watching the progress of many cases, and from the analogy of the symptoms produced by mercurialization, with those affecting the guttural and aural mucous membrane in influenza, dyspepsia, and the exanthemata, I believe mercury, like them, injures the sense of hearing through the medium of the mucous surfaces. Long after the salivary glands have ceased to be affected, an erythematic state of the throat and fauces remains, often by its persistence affecting the Eustachian tube and tympanum in the manner I have described, when chronic catarrh has been the exciting cause. It may be urged that when deafness follows a mercurial course directed against syphilis, the syphilitic disease is quite as likely as salivation to be the cause of deafness. Syphilis may, in some cases, be the chief agent in producing deafness; but I believe the great anti-syphilitic given in excess to be ten times more prejudicial, because I have seen so many instances where this medicine was introduced under other circumstances, and even ill-advisedly as a curative agent in incipient deafness, with the same results. I might multiply cases in which this has happened, and where patients themselves confidently referred the aural malady to this cause. One case, of a very decided nature, I some time ago attended. It was a patient who was recommended by Sir Benjamin Brodie to consult a gentleman celebrated for his treatment of a local disease from which he suffered, and which was cured by a mercurial course, but at the expense of producing a deafness which is now altogether irremediable."

We think that the practical character of the above observations will induce many in the profession to peruse the whole of Mr. Yearsley's Treatise,—an undertaking which we are disposed to believe may be the means of communicating to the minds of his readers, at least a portion of the very high estimate which the author evidently entertains of the value of his own opinions and discoveries.

A Practical Treatise on the Causes, Symptoms, and Treatment of Spermatorrhœa. By M. LALLEMAND. Translated and edited by H. J. M'DOUGALL, M.R.C.S. &c. 8vo. pp. 333. London: Churchill. 1847.

THIS is an abridged translation of the well-known work of M. Lallemand, on a disease, the insidious effects of which have been hitherto greatly overlooked in this country. Several valuable papers on the subject have been pub-

lished in this journal by Mr. B. Phillips; but, with this exception, we look in vain among surgical writings for any practical remarks in reference to it. There cannot be the least doubt, that paralysis, insanity, epilepsy, and other nervous disorders, have arisen from this disease, but have been treated by practitioners as if they depended on other causes. The volume before us is copiously illustrated by cases which shew all the protean effects that have been observed to follow spermatorrhoea. Out of one hundred and fifteen cases reported by M. Lallemand, Mr. M'Dougall has made a selection of sixty-two, of which the details are fully given. From a perusal of some of these it appears to us that the author is disposed to take rather a gloomy view of the subject. We must refer to the volume itself for the details of treatment. The translation is creditable to Mr. M'Dougall. He has carefully avoided anything like empiricism, and has treated the subject as it should be treated by a professional man desirous of improving surgical practice.

Portraits of Diseases of the Skin. By ERASMUS WILSON, F.R.S. London: Churchill. 1847. Fasciculus I. Folio.

THIS is the first fasciculus of a series of coloured drawings on a large scale illustrative of Diseases of the Skin. The plan pursued is that of taking, as they present themselves, cases which offer good specimens of the special diseases. It is announced that a description of the case, with practical remarks, will accompany each plate: hence the author does not propose to follow any system of classification. This is quite immaterial, especially as it is his intention to arrange the plates in a classified order on the completion of the work. Two fasciculi of four plates each will appear in the course of the year. The present number contains illustrations of *Chloasma*, or liver-spot; two of *Favus*, or honeycomb ringworm; and one of *Psoriasis Palmaris*. The drawings are in light lithograph, by Bagg, and are coloured from the life. They appear to us to be executed with great care, and admirably fitted to assist diagnosis and to familiarize the practitioner with the special characters of diseases of the skin.

Proceedings of Societies.

WESTMINSTER MEDICAL SOCIETY.

Saturday, November 20.

DR. WEBSTER, PRESIDENT.

DR. SNOW made some remarks respecting chloroform. He said that this agent, which had been introduced by Dr. Simpson, to be inhaled instead of ether, was preferable to the latter in some respects, although it was impossible that anything could be more efficient than ether, as it was capable of totally preventing the pain in every operation in which it might be properly applied. He considered that the action of chloroform on the nervous system was identical with that of ether; by regulating the proportion of vapour in the air, he had produced the same effects on animals by both agents; chloroform, however, had the advantage of being less pungent, and, therefore, less care was required in graduating its first admission to the lungs; it was readily inhaled, and produced its effects with great rapidity, and the quantity consumed was curiously small when compared with ether. He had administered it on Thursday, in an amputation of the breast performed by Mr. Tatum, at St. George's Hospital. He gave it with his usual apparatus, the water-bath being 55°, and the quantity of vapour in the air inhaled not more than ten per cent. by measure, yet the patient was ready for the operation to begin in less than a minute, and it was performed without the least sign of pain, being equal to the best cases of etherization. The patient recovered her consciousness, as might have been expected from narcotism by ether to the same degree, and she was going on well. Only one fluid-drachm of the material was used, although about ten fluid-drachms of ether would probably have been used in the same operation. He (Dr. Snow) had inhaled it until he became unconscious, and was very sick afterwards, as on the only occasion on which he inhaled ether to the same extent. When the full effects of ether could be induced quickly, there was no preliminary excitement, and as the new agent produced its effects very speedily, excitement previous to insensibility could probably be altogether avoided in its use. The chloroform placed on the table had been given to him by Mr. Bullock the chemist; it had been rectified from chloride of calcium; he (Dr. Snow) found its boiling point to be 140°; he was not aware that the elastic force of its vapour, at other temperatures, had been ascertained; but, from some experiments that he made, it seemed to follow a

ratio very similar to those for ether-vapour and vapour of water; he had ascertained the quantity of vapour of chloroform that air would hold in solution, at various temperatures, and it was shown in a table of which the following is a copy:—

Quantity that 100 cubic inches of air will take up.

Temp.	Cubic inches.
50°	9
55°	11
60°	14
65°	19
70°	24
75°	29
80°	36
85°	44
90°	55

The quantity of this vapour in the air the patient inhaled at ordinary temperatures was only about a quarter as much by measure as there would be of ether, being, however, nearly twice as heavy; there was nearly half as much by weight. Now, on account of the small space it occupied, it only excluded the air to a quarter the amount that ether-vapour did, and therefore interfered but little with the natural process of respiration; the patient, indeed, could take in nearly the usual amount of oxygen without quickening or enlarging the respiratory movements. It was to be observed that temperature exerted a great influence over the quantity of this vapour that air would take up, and, thus, an elevation of little more than fifteen degrees in the warmth of the apartment would double the amount of it which the patient would inhale in a given time, if no means were taken to regulate the evaporation. Dr. Simpson recommended the chloroform to be inhaled from a sponge or handkerchief, and this simple means was efficient; but he (Dr. Snow) preferred to use an apparatus, as, without it, more of the vapour was blown away by the warm breath of the patient than was inhaled. The strength of the vapour could not be regulated; it could not even be known when it was all expended, and no exact observations could be collected. The chloroform was of easier application than ether, on account of its quicker action; but for the same reason, greater care was required in its use to avoid accident.

Saturday, Nov. 27th.

MR. HANCOCK, PRESIDENT.

A VERY long and elaborate paper on aneurism of the aorta, by Dr. Ray Golding, was read. It could not be made available for a report.

Chloroform.

Some observations on this new agent were made in the course of the evening.

Mr. I. B. BROWN had recently employed it as a remedial agent in a case of bronchitis in a lady about fifty, in whom, after the acute symptoms had been removed by appropriate treatment, great restlessness and sleeplessness, with some cough, presented themselves. These were so urgent that for three nights she obtained no sleep whatever. She could not bear any kind of opiate. Under these circumstances, he placed half a drachm of chloroform in a sponge to her nostrils. It took almost immediate effect, and she had two hours of most refreshing sleep. Restlessness, however, returned on awaking, and continued for some hours; but since then she has had good nights, and is free from the symptoms mentioned.

Mr. GREENHALGH had the day before exhibited the chloroform in the way recommended, by holding it to the nose in a sponge. The patient was a gentleman, who was the subject of severe attacks of spasmodic asthma, which usually were of some duration, and from the effects of which he did not usually recover under two or three days. In this attack he administered forty minims of the chloroform. The patient almost immediately fell into a profound sleep, from which he awoke without any of the usual consequences of the attack. So pleased was he with the effect of the remedy that he now kept a dose of the preparation in readiness to inhale if an attack came on. He (Mr. Greenhalgh) had employed chloroform in a great number of cases, and had himself frequently inhaled it. It had the advantage over ether of being more easily applied, producing no excitement, being more rapid in its action, and leaving none of the unpleasant sensations behind it which ether did.

Professor MURPHY had lately exhibited the chloroform in a case of perforation, occurring in a woman with a deformed pelvis, and in whom no other operation could have been resorted to for delivery. Dr. Snow had in this case exhibited the agent, and though the operation lasted for three-quarters of an hour, she was quite unconscious during the whole time, and when she awoke at the conclusion of the operation, expressed her surprise at her delivery. She had undergone the operation before, and had suffered greatly, the consequences of the proceeding being felt by her for the space of three months afterwards, so that she could not leave her bed. In the present instance the operation had been performed only two days since and she was now nearly well.

Dr. SNOW said, that all the effects which had been exhibited in this case would have been obtainable from ether; the chloroform, too, was more expensive.

Professor MURPHY observed, that when, in other obstetric cases, he had administered

ether, he had been dissatisfied with the manner in which the patients had recovered from its effects; the state which they then exhibited was similar to half-drunkenness. Had flooding occurred under these circumstances, he should have been apprehensive of the result. After the use of chloroform the patient awoke quite tranquil.

Mr. HANCOCK had employed the chloroform in two cases of strangulated hernia on which he had operated; the effects were most satisfactory, and the patients awoke calm and collected. When ether was given, he had found patients awake in an excited state.

Dr. LANKESTER inquired whether sickness followed the use of chloroform more frequently than that of ether? In three out of five cases in which he had seen chloroform employed, sickness followed. This was not the case when ether had been used in those instances which had come under his own observation.

Dr. SNOW said that in this respect the ether and chloroform were similar. It depended on the state of the stomach, whether full or otherwise, whether vomiting occurred. It took place on an average in about one in five cases.

Mr. BARNARD HOLT had seen the chloroform employed in several cases; in all of them it had produced violent convulsions. He had seen the same effects from ether.

SOUTH LONDON MEDICAL SOCIETY.

November 25, 1847.

Dr. HUGHES, PRESIDENT, IN THE CHAIR.

Dr. P. MURPHY read a paper on
Certain Forms of Headache.

The author, alluding to the frequency of the above symptom, stated his intention was to confine himself to the consideration of those varieties originating from disease of bone, or its periosteal covering; from disease of fibrous structures, or rheumatism; from affections of the occipital nerves, or from deficiency or excess of blood within the cranium.

Periostitis of the cranium is scarcely met with unless after a mercurial course, the constitution being almost always scrofulous, and is generally found to invade either the coronal or parietal bones, which the author attributed to their less protected situation. The diagnosis of this form of headache, although not difficult, has been at times erroneous. The pain is severe, and confined to one or more spaces of the above-mentioned bones; is increased by warmth at night, by stimulating drinks, by exposure to cold and pressure; and a raised surface

can be detected by the finger at the spot in pain: and, on inquiry, it will be found that more than one course of mercury has been undergone. It occurs chiefly in men below 40 years of age, and in the degraded class of females. The treatment should consist in the application of the Empl. c. Hydr., spread on thick leather, to the part, which both protects it from the cold, and removes the effusion of lymph. The exhibition of the Iodide of Potassium, combined with Morphia and Tinct. Digitalis, is highly useful.

Another form of headache, the rheumatic or fibrous, not very common, is located in the tendon of the occipito-frontalis, the temporal aponeurosis, and tendinous insertions of the muscles at the back of the head: it is usually preceded by rheumatism of other parts, and is increased by muscular movements. Warm coverings, when they can be applied, usually relieve it; also sinapisms: and, if the pain is very severe, leeches and cupping, and a few doses of calomel with opium, seldom fail to give relief. Gout may also attack the same parts, but may be diagnosed by our previous acquaintance with the habits of the patient. In both cases the pain is intermittent, changes its locality, is felt to be external, and the health is not affected.

The next form belongs to the class of spinal irritation, is very frequent, and met with exclusively in females during the menstrual periods, and attacks mostly the left side of the head: the pain is intermittent, shooting, and lancinating; may be fixed for days, and is most severe at the temple (when it is termed *clavus hystericus*), and next at the parietal protuberance and occiput: it proceeds from the sub-occipital nerve, and, if the exit of the nerve is pressed upon, pain more or less severe is complained of, extending along the whole course or at certain sites only of the nerve—as at the temple, nape of neck, parietal protuberance, &c.: it is usually increased during the menstrual period, and is generally a complaint of unmarried females between the 23d and 35th years of life, and is indubitably a form of hysteria. The menses are usually profuse or difficult, the bladder irritable, and there are ill-defined painful sensations about the pelvis; other forms of neuralgia often co-exist. The irritation of the sub-occipital nerve must be traced to the ovaries, being only present where these exist, and while capable of fulfilling the function of menstruation; and our treatment must be primarily directed to remove any congestion or irritation of these peculiar organs, and secondarily to lessen the pain of the nerves. The author advises the daily use of hip-baths or sea-bathing, where possible; attention to prevent accumulations in the rectum; ab-

stinence from stimulants; mental employment; Inf. Valerian c. Digitalis, with pills of *Assafoetida*; occasionally general or only local bleeding; and, when these fail, a gentle mercurial action, the cold bath being during the time omitted. As local means he recommends belladonna plasters, veratrine ointment, sinapisms, or blistering. Where, however, the patient is exhausted by leucorrhoea or profuse menstruation, with symptoms of chronic inflammation of the womb or ovaries, the treatment becomes more doubtful; but the author prefers the trial of a tonic treatment, and advises the exhibition of the valerianate of zinc and quinine, as especially efficacious, and the sulphate of iron in infusion of valerian when there are evidences of confirmed chlorosis. This headache may be termed the *nervous* headache: it also assumes another form, which may be termed the *cutaneous* headache, and is the hemicrania of our forefathers: it seems to be located in the integuments of one half—usually the left side—of the head, which is so exquisitely sensible as scarcely to bear the least touch of the finger, and the pain never passes the mesial line.

Another form of headache is that arising from deficiency of blood within the cranium, and coming on after hæmorrhages, exhausting discharges, or any other debilitating causes: the best examples occur in chlorosis. It is increased by the erect, diminished by the recumbent posture; is not a very painful form, but is often attended with impaired vision: its cause may be traced to diminished muscular power of the heart, which palpitates on slight exertion: there is also dyspnoea, pale face, and other symptoms of a feeble circulation, with a sinking pain at the epigastrium, and craving appetite. If the true cause of this headache is mistaken, and depletion used, paralysis has been known to supervene, but if the debility be removed, the muscular power of the heart is easily increased; and the most useful remedies are, steel by itself or combined with quina, full diet, and the recumbent posture.

The last form of headache alluded to by the author arises from excess of blood, and may exist as a passive or congested, or as an active or inflammatory state. The former, arising from the various known causes of congestion, is diagnosed by the constant heavy pain at the anterior part of the head, increased by the recumbent posture, sense of chilliness, slow feeble pulse, tendency to vomiting, and pain in the lumbar region, caused by congestion of the spinal cord. It is a dangerous form of headache, and has in the depressing diseases proved in a few hours fatal, but in other cases has lasted weeks without much mischief. The treatment should be to induce reaction as soon as possible by the warm-bath or an

emetic. The author deprecated the usual attempts to arrest vomiting during the invasion of fevers. If the headache persists, with hot skin, leeches to the inner nares will be found of value; applied to the temple, they debilitate without relieving this pain of head, and they are altogether inadmissible when this coexists with typhus or scarlatina. Blisters may also be applied, and diaphoresis produced by usual means; cold applications to the head the author considered useless, and even likely to increase congestion. Care was also requisite that mere congestion should not by the use of stimuli be forced into inflammation, which is the next stage if resolution or fatal termination does not take place. The author regarded idiopathic phrenitis as a most rare disease, and hydrocephalus acutus as congestion not inflammation. Phrenitis was well marked by the tensile pain increased on stooping, by the bright eye, hot skin, nausea, and vomiting, tendency to delirium, and occasional twitching of the muscles of the face; the most active antiphlogistic measures should be used.

There were other forms of headache easy of diagnosis, but of these the author would only mention the constant pain of head in children, with emaciation and want of sleep, and which diagnosed tubercles of the brain. In the headache of pregnant females referred to the centre of the head, and attended with a remarkably slow pulse, and in which if bleeding is neglected, convulsions, abortion, and too often death, are apt to supervene; and lastly, the pain of the head occurring after a night's debauch, the cause of which, whether in the stomach or affected organ, the author considered not to have been sufficiently investigated.

The PRESIDENT inquired of the author his means of judging in cases of headache whether the treatment should be depletory or stimulating, as in his own practice he had at times found it extremely difficult to decide, and was often obliged to try, as it were, a tentative treatment.

Dr. P. MURPHY thought we should not often be led astray if attention was paid to certain points. If a patient complained of the pain of head coming on and increasing after getting up in the morning, or assuming the erect position, and relieved on resuming the horizontal; if troubled with dimness of sight, faintness, perspirations, palpitations on exertion, cramps of legs, depression of spirits, frightful dreams, &c., he concluded a tonic treatment would be useful; headache from congestion, is moreover, a rare disease. In answer to Mr. Wright, his usual practice in *clavus hystericus* was to commence with tonics, which usually effected a cure. Still in some cases he resorted to cupping at the back of the neck, with the greatest benefit,

after the former plan had failed. In cases in young females where signs of congestion about the womb existed, leeches to the groins were often useful.

Dr. SILVESTER agreed in the value of Dr. Murphy's diagnostic symptoms, and alluded to the existence of the venous bruit, which when present always indicated an anæmial condition of system, and contra-indicated depletion, but is benefitted by a tonic plan; as a general rule, he thought it wiser not to deplete in headache. He did not agree with the author that the pain of syphilitic headache occurred generally at the front or most exposed portions of bone; he thought it was more general about the muscular insertions at the back of the neck, and in parts well covered with muscles; there appeared to be an electric attraction in the poison for certain parts of bones.

Mr. E. COCK, in allusion to syphilitic headache, inquired of Dr. Silvester whether he did not consider it to arise more frequently from the mercury administered for the cure of the primary disease than from the syphilis itself.

Dr. SILVESTER had known the headache in his own practice arise where no mercury had been used for the primary symptoms; he believed syphilitic periostitis to be due to the primary disease, although the use of mercury might modify it.

Mr. E. COCK differed entirely from Dr. Silvester, as in almost every instance he had seen, in 49 cases out of 50 of syphilitic periostitis and disease of bone, mercury had been administered; its amount might vary, as also its effects, in various cases: the few cases where it had not apparently been used he always regarded as exceptions to the general rule, and thought they might have a rheumatic origin, but on careful examination of the apparent exceptions, it would often be discovered mercury had been given perhaps for some other disease. In regard to treatment, abstraction of blood by leeches was but a temporary remedy, but iodide of potassium effected a permanent cure. He mentioned some interesting cases of intense headache following a blow or injury received perhaps years back, and ceased by exfoliation of bone. In answer to the President, Mr. COCK stated that the cases alluded to were those where an individual, at some period of his life, had received a blow on his head, and from which he appeared to have recovered. After three or four years from the date of the injury, he begins to suffer from severe pain of the head, which, in severe instances, has been found to proceed from a diseased state of that portion of bone where the injury has been committed; he mentioned three or four cases in his own practice, where these severe pains had occurred, with epileptic fits, after injuries, and

where he had seen the operation of removing the diseased bone by the trephine attended with instantaneous and permanent relief: in every instance he had observed, on removing the bone, granulations arising from the dura mater.

Dr. P. MURPHY regarded the cases mentioned extremely interesting both to the physiologist and surgeon, as explanatory of the process of caries and exfoliation, and agreed with Mr. COCK as to the cause of syphilitic periostitis, and alluded to the comparative infrequency of caries from syphilis at the present day compared with what it was twenty years ago, and which he attributed to the little mercury now used.

Mr. SWETS, having alluded to the infrequency of nodes where mercury had not been used, and to the efficacy of the iodide of potassium, and Dr. Silvester calling attention to the rarity of disease of bone, although mercury was constantly given for other diseases,

The Society adjourned.

Correspondence.

IMPROVEMENTS IN THE DENTAL FORCEPS— REPLY OF MR. CLEMOND.

SIR,—In a lecture on dental surgery, by Mr. TOMES, published in the last week's MEDICAL GAZETTE, the following statement occurs:—

"Nay, in further testimony of the value of the improved forceps, a member of my own profession, after ordering a set of my instrument-maker, found them, on trial, so serviceable that he was induced to write a little work minutely describing them, and strongly recommending their general adoption, to the exclusion of the instruments then in use; though for the honour and good name of our profession, I regret to say that he altogether neglected to acknowledge by whom the instruments of which he had availed himself, and was describing, were designed and brought to their present state of utility, and published. Indeed, so anxious has this author been to take to himself whatever credit there may be in the improvements, that he has—whenever he had the power—induced the makers to stamp the instruments with his name."

An asterisk appended to the paragraph informs me that I am the author referred to, or I should not have known it, so utterly without foundation is the whole statement. Its first sentence contains an error of judgment on the part of Mr. TOMES—for proof that it is so I beg to refer him to the book itself; whilst the statement in the second

sentence is wholly unfounded; and for proof of this I refer him to any instrument-maker he pleases.—I am, sir,

Your obedient servant,

J. CHERY CLENDON.

Conduit Street, Nov. 20, 1847.

. We can insert no further communications on this subject, as it is a question of a private nature between our correspondents, and does not concern the readers of the journal.

CASE OF PALSY OF THE HEART.

SIR,—As the following case bears upon those views of "palsy of the heart," with hypertrophy of the aorta, contained in No. 122 (N. S.) of your journal, I take the liberty of forwarding it.

Joseph Fisher, aged 54 years, a stout healthy looking man, by occupation a cow doctor, of temperate and regular habits, though necessarily much exposed to cold and wet; is stated by my friend, Mr. J. N. Thompson, who attended him during life, to have had an attack of acute rheumatism seven or eight years since: he perfectly recovered, and enjoyed his usual robust health, up till Nov. 1846, when he was seized with symptoms of pericarditis, from which he sufficiently rallied to be enabled to resume his accustomed calling, though his attention was ever after directed to the state of his heart, which, on slight exertion, was observed to palpitate violently, with excessive pain at the præcordia and shortness of breath, for which, on account of their severity, he was induced habitually to resort to opium for relief. October 11th, 1847, his præcordial pain, excessive dyspnoea, and palpitation, became alarmingly increased, with a quick, feeble, and intermittent pulse, which, by the use of appropriate remedies, were temporarily relieved, but continued to return at uncertain and irregular intervals. After recovering from an exceedingly severe paroxysm, on the evening of the 14th, he suddenly fell back and expired, retaining, in a masked degree, full command of his mental faculties, and a healthy appearance to the last.

Sectio cadaveris, 24 hours after death.

—But slight ecchymosis, scarcely any rigidity of the body, which was rather inclined to be fat, with good muscular development. On opening the cavity of the chest the lungs were observed but slightly to collapse, and, on being removed, they presented, throughout the upper lobes, an universal apoplectic appearance on both sides, with slight emphysema posteriorly: the pericardium contained about four drachms of straw-coloured fluid, with, here and there, slight roughness, the result doubtless

of inflammation. The heart was unusually pale and enlarged, surrounded with a considerable quantity of fat; the valves healthy; no sign of disease within the cavities; the aorta was dilated about one-third its usual size, and immediately above the valves it was thickened, irregular, and polished; whilst just at the arch there was an absorption of the two inner with considerable dilatation of the outer coat, forming a depression on the inner surface capable of containing a small nut, which doubtless was the commencement of an aneurism. The abdominal viscera was healthy, and there was no further lesion or evidence of disease. From the sudden manner in which death took place, and the post-mortem appearances above detailed, I am induced to look upon the case as one of "palsy of the heart," brought on by the violent paroxysm immediately preceding death.—I am, sir,

Your obedient servant,

LORY MARSH.

Nottingham, Nov. 25th, 1847.

TO THE STUDENTS OF ST. BARTHOLOMEW'S HOSPITAL.

[We have been requested by Dr. Burrows to give insertion to the following:—]

Gentlemen,—I deeply regret to find that certain portions of my evidence, given before a Committee of the House of Commons, were expressed in a manner calculated to disturb the good feeling which has hitherto subsisted between us; and that the intention has been imputed to me of wishing to disparage you in public estimation.

I am anxious to explain to you the real scope and purport of my remarks on the occasion referred to, being conscious that those remarks were inadvertently couched in terms which have rendered them liable to misinterpretation.

In answer to a question put to me by Sir James Graham, I attempted to show that no analogy exists between the condition of Barristers and that of the majority of the young men who enter our profession; and I pointed out that Barristers, being usually possessed of ample means, are enabled to devote a long period to their preliminary education, whereas the majority of the gentlemen who enter the medical profession are compelled, by the more limited extent of their pecuniary resources, to proceed at an early age to their professional studies, in order that they may the sooner obtain an independent maintenance; some by the acceptance of public appointments, and others by at once commencing private practice.

These remarks were originally made in answer to Question 442. At a subsequent stage of my examination, a member of the

Committee read to me a part of that answer, with two not unimportant inaccuracies—using the term "*humble means*" for *limited means*," and "*in a small way*" for "*as he may*." (Compare the answer to Question 442 with Question 833.) And it is to this incorrect version of my answer that attention has been publicly called.

It will be seen, that in those remarks my aim was not to describe *absolutely* the station in society and the acquirements of the students of medicine, but to contrast their position with that of the highest section of the legal profession. In such a comparison (which the nature of the question forced me to draw) the circumstances of my professional brethren at the commencement of their career, could not fail to appear at a disadvantage. But in other parts of my evidence, where I had occasion to speak *absolutely* of the members of my profession, I maintained the right of every one of them to be regarded "*as a gentleman and a man of education*" (see the answer to Question 479); and I more than once repudiated terms of a degrading tendency when applied to them. Thus (in answer to Question 830) I said: "*I do not like that term POORER CLASS, it may mean to infer some degree of inferiority, when all classes are equally respectable.*"

In answers such as these, I expressed the sentiments I have always entertained with regard to the great body of my professional brethren. I believed that, in the whole course of my evidence, not a word inconsistent with these sentiments had passed my lips, otherwise I would not have referred, in support of the statements I had made, to my long intercourse with the gentlemen educated at St. Bartholomew's Hospital,—gentlemen with whose character and reputation, my own, as a Teacher of Medicine, are identified, and of whom I have, on many public occasions, gladly testified, that no other body of students in this metropolis is more highly qualified, by their acquirements and conduct, to secure the respect of society for our useful and honourable profession.

In conclusion, Gentlemen, let me assure you, that nothing was further from my intention, than to utter a word which could tend to disparage you in the estimation of our profession or of the public; and let me further assure you of my sincere regret, that any incautious expressions of mine have admitted of such interpretation, as to wound the feelings of those whose esteem I have constantly desired to cultivate.—I remain,

Gentlemen, yours very faithfully,
GEORGE BURROWS, M.D.

St. Bartholomew's Hospital,
Dec. 7, 1847.

OPERATION UNDER THE INFLUENCE OF CHLOROFORM.

SIR,—The following incident, which occurred at Guy's Hospital yesterday, seems to me of sufficient importance to trouble you with its details:—

A boy, *æt.* 11, was under the care of Mr. Cock for disease of the right knee-joint, and it was determined to divide the tendons of the flexors. The boy was in good health, but his nervous system a little weakened from confinement to bed; his heart and lungs sound. A small quantity of chloroform, not exceeding 30 drops, was put upon a cone of bibulous paper, and placed over his mouth and nose. In less than a minute he was entirely insensible, the pupils becoming widely dilated, and the pulse small and frequent. As the operation was being proceeded with, his consciousness partly returned, and a few drops of the chloroform were put on a handkerchief and applied to the nose. He was instantly affected, and to such a degree that there was the greatest apprehension of his never rallying; the pulse was very feeble, 56; the breathing so indistinct as scarcely to be distinguished; the face pale, lips congested; the symptoms of collapse extreme. Ammonia was employed, and, after about five minutes, he gave two or three deep inspirations: it was, however, more than fifteen minutes before he was so far himself as to be considered out of danger. Subsequently a small quantity of brandy was administered. He complained of headache. For a long time after he recovered his special senses and power of motion, general and perfect anaesthesia of the surface existed. This morning he is quite well.—I am, sir,

Your obedient servant,

WILLIAM W. GULL.

Dec. 8, 1847.

MEETINGS OF MEDICAL SOCIETIES APPOINTED FOR THE ENSUING WEEK.

Westminster	Sat. Dec. 11, 8 P.M.
Guy's Physical	" " "
Medical	Mon. " 13, "
Medical & Chirurgical	Tues. " 14, 8½ "
Hunterian	Wed. " 15, 8 "

MEDICAL REGISTRATION.

ON a motion recently made by Mr. Wakley in the House of Commons, a select Committee is to be appointed for the purpose of inquiring into the registration of legally qualified practitioners of medicine, and into the laws which regulate the practice of medicine in the United Kingdom. The Committee has not yet been nominated.

Medical Intelligence.

THE CHOLERA IN RUSSIA.

"THE *Prussian Universal Gazette* contains the following, dated St. Petersburg, 17th ult., relative to the progress of the cholera in the Russian empire:—"The cholera was decreasing at Moscow, since the 3d of November. On the 5th there were 94 patients, 49 of whom died, and 39 recovered; and on the 9th, out of 77, 32 recovered, and 22 died. Since the 30th of September, the day on which the epidemic first manifested itself, 2,011 inhabitants were attacked, 930 of whom died, 422 recovered, 639 were under medical treatment, and most of them were expected to survive. From Moscow the scourge extended to several districts of that government. At Kiev, it was on the increase. At Kasan it rapidly decreased, and, on various other points of the empire it presented a less pernicious character. During its passage from the government of Astrakan to that of Saratov, it was observed—1. That in its march towards Saratov, it constantly advanced against the wind. 2. That, as in 1830, it again spared the colony of Sarepta, although the communication of the latter with the neighbourhood had not been interrupted—a fact which cannot be attributed to the position of Sarepta, for it nowise differs from that of the other localities watered by the Wolga. It is no doubt owing to the absence of an indigent class, which is usually the most dangerously affected by the cholera. The inhabitants of Sarepta are industrious, in comfortable circumstances, and remarkable for their cleanliness and sobriety; they are descended from a Moravian colony, founded in 1766, in a country full of salt springs. 3. That in passing from Kamuchin to Saratov, the cholera had spared the foreign colonies on its passage, but had returned thither later, when it had lost much of its intensity at Saratov. The distemper manifested itself in those villages of colonists immediately after the arrival of travellers coming from Saratov, who already laboured under it on their arrival, or were attacked with it shortly afterwards. The period of its incubation did not, in any case, exceed four days. This would prove that the epidemic is communicated by the persons. It was also observed at Saratov that the inhabitants of the localities visited with the cholera were less liable to catch it in their intercourse with the patients than those who arrived from a district in which it had not yet appeared. The epidemical character of the disease was particularly proved by persons suffering

during its prevalence from pain in the pit of the stomach, from a general feeling of uneasiness and want of sleep, although the rest of the body experienced no derangement. According to the most recent accounts, the cholera appeared in the government of Kaluga, in the district of Lichwin, on the 29th of September; and on the 21st of October in the town of Kaluga, where, during the first week, seven cases occurred, five of which proved fatal. On the 1st of November it broke out at Kechitza, in the government of Minsk, where it attacked during the first day four persons, three of whom died."

The accounts received from Germany state that precautionary measures were everywhere being adopted against the invasion of the cholera. The medical men sent by the different Governments to study the nature of the malady all agreed that it pursued precisely the same course as in 1831. After making comparatively trifling ravages in Southern Russia, where it has now completely subsided, it advanced towards the north, sparing the same localities it had spared in 1831, and visiting those which it had decimated in that year. The mortality produced by it is less than in 1831-32, because fewer individuals are attacked, and because physicians are better acquainted with its treatment; but the symptoms are exactly similar, and in some instances the malady is more violent and its progress more rapid than formerly. In several districts, moreover, it is followed by typhus fever, the consequences of which are often more fatal. The cholera is now raging with a certain intensity in the government of Kiev and the adjoining provinces. Thence it has extended towards Galicia and Moldavia, as in 1831. Some cases were even said to have already manifested themselves at Kamenetz-Podolskoi. The Austrian Government had sent physicians to Galicia, furnished with extensive powers and orders to establish a rigorous sanitary cordon along the adjoining portion of the frontier. As far as the epidemic has been observed, it is invariably preceded by influenza.—*Times*.

A letter from Vienna of the 28th ult. states that the cholera had manifested itself with some violence in the circle of Tarnopol, in Galicia. The great scarcity of provisions prevailing in that district considerably favoured the development and propagation of the epidemic.

EPIDEMIC IN THE NORTH OF SCOTLAND.

DURING the last two weeks an epidemic of a most unprecedented and remarkable character has prevailed throughout the north of Scotland. It began in Dundee, and then swept over the whole of the east coast until it reached the extreme point of Kinnaird's

Head, when it took a westerly direction, and is now extending itself along the shores of the Murray Frith, and inland through the lower districts in the direction of Huntly, Keith, Elgin, to Inverness. It affects the system first by pain in the throat; then follow headache, sickness, with expectoration of a dark bilious-looking substance, and general debility all over the body. In the city of Aberdeen to such an extent did this epidemic prevail last week, that for one or two days University and King's College—now in session—was closed; at Marischal College and University half the students were ill; at the Grammar School the same proportion were afflicted. At Gordon's Hospital, out of 150 boys, 55 were confined to their beds. The West-end Academy had to be shut up for a few days; and amongst those who were able to attend the public schools there was nothing to be heard but the incessant cough, as if the pupils were breathing an atmosphere of the most pestilential kind. On Sunday the churches and chapels were half empty, and so general had the epidemic become amongst the clergy that supplies for several of the pulpits had to be got from Edinburgh and other places in the south. At Montrose the epidemic has been equally alarming. One school was short 65 scholars, another 60, a third 50, and so on; the general deficiency in the muster in seven public schools being 350 scholars, and the total deficiency in all the schools 810 scholars. Some of the public works have been stopped for want of hands, and it may be said that in every family in these districts some one is ill. The weather, which had been damp and rainy, was considered to be the principal cause of the disease. We are glad to hear that very few deaths have occurred.

MORTALITY FROM YELLOW FEVER IN NEW ORLEANS.

It appears that the deaths from yellow fever in New Orleans between July 5 and October 22 amounted to 2544.

CONTAGIOUS DISEASES PREVENTION ACT, AND DEALERS IN PATENT CONCENTRATED MANURE.

On the 2d inst., a foreign gentleman, named Henri Poittevin, described as a "patent highly concentrated manure manufacturer," in Queen Street, Mile End, attended before the sitting magistrate at Worship Street to answer an information charging him with having suffered a large quantity of offensive and noxious matter to accumulate upon his premises, and thereby seriously impaired the public health.

Inspector Ellis, who had been directed by the magistrate to visit and examine the premises, stated that upon reaching

the place he was conducted by the defendant's foreman into a spacious enclosure, about 100 yards square, in which he found three large sheds, each of about 50 or 60 feet in length, and of proportionate width, and two of them open to the atmosphere at the sides. These sheds were each filled to the depth of four or five feet with a mass of compounded matter, of the consistency of earth, to the extent of several hundred tons, and apparently composed of blood, nightsoil, and other animal substances, and exhaling such an offensive odour that it was perfectly overpowering.

Mr. Samuel Byles, one of the district surgeons of the Whitechapel Union, whose duty comprised medical attendance at the Spitalfields workhouse, stated that the defendant's manufactory was so contiguous to the latter building, that scarcely 100 feet intervened between them. The workhouse was at present unusually crowded with inmates, amongst whom febrile and other affections considerably prevailed, and he had every reason to believe that these were greatly induced by the contiguity of the defendant's manufactory, as whenever the wind blew from his premises it carried an odour in the highest degree offensive, and calculated to produce the most pernicious consequences. On such occasions, whatever diseases happened to prevail in the workhouse exhibited a great tendency to putrescence, and assumed a most malignant and intractable character. The house also contained nearly four hundred children, who were more susceptible than adults to the effects of an impure state of the atmosphere; and amongst these there had lately broken out no less than twelve cases of spontaneous gangrene, a disease which but rarely existed unless the atmosphere was very impure, and the whole of these cases had terminated fatally. He had likewise found that whenever the effluvia became powerful, the adult portion of the inmates were invariably attacked with diarrhoea of the worst form; and, as this immediately subsided on the wind changing, he felt satisfied the nuisance in question was the cause of the illness. During the prevalence of a humid state of the atmosphere, however, whatever direction the wind might be in, the effluvia was always highly offensive and dangerous, and the most serious results must ensue again, if the nuisance were not abated.

Mr. John Liddel, also an union surgeon, confirmed the evidence of the last witness, in whose experience he entirely coincided, and added, that after his own visit of inspection to the defendant's premises he was seized with a violent sickness, which lasted three-quarters of an hour, and was so seriously ill for three or four days subsequently that he was obliged to place himself under

the care of the other surgeon. The odour from the defendant's manure so permeated the atmosphere, that he had frequently smelt it at a distance of three-quarters of a mile, and he considered it highly dangerous and destructive to the health of the whole neighbourhood.

Mr. Samuel Birch, one of the surgeons of the London Hospital, situated a considerable distance from the premises in question, also spoke to the deleterious effects of the malaria so engendered upon the health of the patients of that establishment, whose cure was greatly retarded, and the effect of the remedies employed upon them, partially neutralized.

Mr. Buchanan, for the defendant, said he could not deny the existence of the nuisance complained of, but as its immediate removal would be attended with the most ruinous consequences to his client, who had embarked a large capital in a scientific and useful manufacture, he trusted some temporary measures would be permitted, which, while they would protect the inhabitants from further danger, would also enable the defendant to dispose of his stock and plant, which were of great value, and would otherwise be entirely sacrificed,

Mr. Hammill said this was a monstrous evil, proved to be attended by the most frightful effects upon the inmates of the workhouse, and as he would not allow the health of the district to be sacrificed to the pecuniary interests of any private individual, he should refuse his sanction to any suggestion which had not for its object its immediate and total suppression.

Mr. Buchanan trusted there was no wish to ruin the defendant, who was willing to do anything to prevent infection until the cold weather set in, and he had a chance of recovering some portion of the capital he had invested. He called

Mr. Wicksteed, a practical chemist, who stated that if the whole mass of manure were covered to the depth of three feet with earth, and a stratum of sulphate of lime superimposed, the escape of any volatile gases would be entirely precluded, and the injurious effects of the materials employed be so far obviated.

Inspector Ellis, however, said that this would be but of temporary use, as he was convinced that the whole bulk of hundreds of cartloads would be incessantly broken into for sale, which the defendant's foreman had acknowledged to him was his employer's object, and who had also confessed that one ton of the manure had been dug out, sold, and carted away that morning.

An animated discussion ensued between the magistrate and the parties on both sides, in which serious apprehensions were expressed as to which of two courses suggested

would involve the most danger—the removal of such an immense mass of noxious matter at once and continuously, which it was stated would take at least four or five days to effect, or to cover it up and leave it as it stood; but the whole of the medical witnesses at length came to a decided conviction that the former, if performed in the night time, was the only safe course that could be pursued; and

Mr. Hammill, after severely reprehending the practice of carrying on such a destructive manufacture in the heart of a densely-populated and imperfectly-drained locality, said that he entirely coincided in the opinion expressed by the surgeons, and as he felt it his imperative duty to enforce the provisions of such a beneficial enactment in every instance that might come before him, whatever the consequences might be to the persons proceeded against, he should direct an order to be immediately made out for the entire removal of the whole of the noxious materials forthwith.

DEATHS FROM THE EMIGRANT FEVER.

THE following statement is from the *Quebec Chronicle*. It shows, first, the deaths at Grosse Ile for each week in the season, and, adding the deaths in the vessels during the voyage, and while in quarantine, and those in the Marine Hospital, it gives the fearful number of 9,634, at and below Quebec:—
First week, 1; 2d, 16; 3d, 71; 4th, 119; 5th, 155; 6th, 202; 7th, 156; 8th, 144; 9th, 165; 10th, 171; 11th, 197; 12th, 188; 13th, 220; 14th, 322; 15th, 288; 16th, 256; 17th, 191; 18th, 143; 19th, 133; 20th, 121; 21st, 86; 22d, 61; 23d, 33; 24th, 14.

Making a total of 3,542

Add to which the deaths on
the passage to this date . 3,000

Do. in vessels during detention
at Quarantine . . 2,182

Do. at Marine Hospital, say 1,000—6,182

Making a grand total of . . 9,634

CHLOROFORM IN PARIS.

SOME experiments with chloroform vapour have been recently made in Paris by M. Velpeau, at the hospital of La Charité. A woman from 25 to 30 years of age, suffering from a cancer of the breast, was made to inhale about a dozen drops of the chloroform on a handkerchief. At first she was merely affected with giddiness, but at the end of four or five minutes she fell off into a sleep. M. Velpeau then made some superficial incisions in the breast affected, and which is subsequently to be amputated. He next cut off a large wart from her hand with a bistoury, and the wound thus made, when bleeding abundantly,

was deeply cauterized. The patient awoke in about two minutes, without having felt anything, and without any of that agitation which characterizes the awakening from ether. The chloroform was next applied to a woman of about 50 years of age, who had to undergo the opening of an abscess in the breast, and with precisely the same effect. The following, however, is a more interesting case, although the results obtained have been partly negative:—A man of 30 years of age, who was attacked with tetanus two days before, in consequence of a wound in the finger, was made to inhale ether several times without effect. At last the chloroform was tried, and at the end of two or three minutes he became insensible, without any previous agitation. The inhalation was continued about a quarter of an hour, and the sleep lasted about double that period. The muscles, which were previously the seat of tetanic convulsions, soon fell into a state of complete relaxation; the mouth opened naturally; the muscles of the trunk became supple, and the breathing was easy. When he awoke, his state was evidently much improved, but after a time the convulsions recommenced. Several new attempts to make him inhale were made, and each time in the same way, with this difference, that on each successive trial the contraction of the muscles yielded less completely to the stupefying influence. On Friday his state was decidedly worse: the tetanic convulsions had reached the lower extremities, and it was thought likely that death would promptly end his sufferings. It is evident from this case that the chloroform exercises a manifest action on the convulsed state of the muscles; and the persons who were present at the experiments were struck with the fact that the patients who took it were perfectly calm.

EXPENSES OF CORONERS—FEES AT INQUESTS.

Reg. v. The Justices of Carmarthenshire.

LORD DENMAN lately gave the judgment of the Court in this case, to the effect that it was the duty of the justices to decide as to whether an inquest had been duly held by the coroner; and, if they were of opinion that an inquest had been unduly held, they were at liberty to disallow the payment of the coroner's fees. But as to those payments which the coroner was bound by statute to pay out of his own pocket in the first instance—such as the payment to medical witnesses, the expense of summoning jurors, hire of room, &c.—the justices had no discretion, but were bound to refund these disbursements to the coroner. In making those payments the coroner acted as the agent of the county treasurer. The law had not made that dis-

tinction without reason; for, while on the one hand the coroner would be prevented from abusing his office by the holding of unnecessary inquests, those who obeyed his authority would have their remuneration certain. The rule, therefore, would be made absolute as to those items which related to the disbursements that had been made by the coroner, and would be discharged as to the rest.

RESULT OF AN EXCISE INFORMATION FOR SELLING SWEET SPIRITS OF NITRE.

THE following case, of some importance to pharmacutists, recently appeared in the *Times*:—

The Attorney-General v. Bailey.

The Chief Baron delivered judgment in this case, which was in the nature of an information for penalties against a wholesale chemist for selling sweet spirits of nitre without payment of duty or taking out any license for the sale of spirits. There was a verdict for the Crown at the trial, subject to the opinion of the Court, whether sweet spirits of nitre came within the meaning of the statute under which the information was filed. Now sweet spirits of nitre was an article well known and easily distinguishable from what was ordinarily called "spirits." The act on which the information was founded gave no precise definition of the word "spirits;" and, therefore, it was to be assumed that by "spirits" was meant what was ordinarily known as spirits, and not sweet spirits of nitre. No doubt spirits entered into the composition of sweet spirits of nitre as they did into other articles; still, in common parlance, no one confounded the two articles. There had been a case in this court (reported in 4 "*Price's Reports*") where a blacking dealer was sought to be charged with penalties as a dealer in vinegar, because vinegar was used largely in the manufacture of blacking; but the Court held that this did not make the blacking manufacturer liable. So in this case the Court refused to put a strained construction on the Act of Parliament, and to say that regulations relating to the sale of "spirits" comprehended the sale of an article well known and readily distinguishable from spirits like sweet spirits of nitre. The Court, under all the circumstances, directed the verdict to be entered for the defendant.—Judgment accordingly.

REPORT OF THE COMMITTEE OF THE ROYAL SCOTTISH SOCIETY OF ARTS, ON DR. ROBERT REID'S "ALVEOLAR HÆMORRHAGE COMPRESS."

Committee—Dr. Douglas MacLagan, Convener; Dr. Ransford; Dr. Sellar.

The Committee on Dr. Reid's Alveolar

Compress beg to report, That, having carefully examined it, they are of opinion that the advantages set forth by the inventor, in his descriptive communication to the Society, are realised by the apparatus. The Committee are of opinion that the most important point of superiority of this apparatus is, the principle of fixing the jaw-plates equally on both sides, by which the pressure can be made more steady, and there is less risk of the apparatus being displaced. Further, the fact that no part of the instrument projects so far from the head as to prevent the patient from taking the recumbent position on either side, is, in the opinion of the Committee, an important advantage. Dr. Reid's recently contrived mouth-plates, capable, on one hand, of expanding, so as to fit any jaw; and, on the other hand, slit so far forward as to be applicable to bleeding from the sockets of the front teeth, are also, in the eyes of the Committee, important improvements. The Committee, in inspecting the apparatus, not only saw it applied to a model-head, but tested its facility of application by placing it on one of their number, on whom it was at once easily and accurately fitted, and by whom it was worn for some time without pain or inconvenience, and without impeding the actions of speaking and swallowing.

All which is reported in the name of the Committee, by
(Signed) DOUGLAS MACLAGAN, M.D.
Convener.

Edinburgh, 1847.

On the 8th ult. the Honorary Silver Medal of the Society was awarded to Dr. Reid for his invention.

ROYAL COLLEGE OF SURGEONS.

GENTLEMEN admitted members on the 3d instant.—W. England—W. S. Savory—H. B. Holl—J. Bustin—R. Montgomery—J. G. Doidge—J. F. Stevenson—T. G. Salt—W. Davies—C. Forbes—A. J. Gee—W. Morris—A. D. Home.

APOTHECARIES' HALL.

NAMES of gentlemen who passed their Examination in the Science and Practice of Medicine, and received certificates to practice, on Thursday, December 2d, 1847:—Edward Henry Malton, Glastonbury—Thomas William Croase, Norwich—James Horniblow Williams, West Stockwith, Bawtry.

OBITUARY.

DR. HARIVEL.

LATELY, in Paris, Dr. Harivel. This gentleman, who appeared to be in perfect health, was in the act of sitting down by the side of a patient, when he suddenly expired.

PROFESSOR DUMAS, OF MONTPELLIER.

M. Dumas, Professor of Midwifery in the

University of Montpellier, has recently died in that city from an attack of pneumonia following influenza.

DR. J. S. CAMPBELL.

On the 2d inst., suddenly, at his residence, No. 16, Weymouth Street, Portland Place, J. S. Campbell, M.D. aged 49.

ROBERT LISTON, ESQ., F.R.S.

It is with deep regret that we this week announce the death of Robert Liston, Esq., which took place at his residence in Clifford Street, on the 7th inst. Mr. Liston had for some time laboured under an affection of the throat, which latterly resisted all treatment. He was in his 53d year.

Mr. Liston was well known as a most skilful operator. He became a Member of the Royal College of Surgeons in 1816; he was admitted a Fellow of the Edinburgh College in 1818, and of the Royal College of Surgeons of England in 1843, of the Council of which he was a Member. He was formerly surgeon to the Edinburgh Infirmary, but had for some years removed to London, where he succeeded in obtaining an excellent practice. He was Surgeon and Lecturer on Clinical Surgery in University College Hospital.

Mr. Liston was the author of various works on Surgery, which have added to his high professional reputation.

Selections from Journals.

PHYSIOLOGY.

ON THE DIRECT INFLUENCE OF LIGHT AND HEAT ON THE ACTION OF THE IRIS. BY M. BROWN-SÉQUARD.

In the following extract from a recent work by M. Brown-Séguard, it will appear that the author is of opinion that light may, by its *direct* action on the iris, influence the movements of this structure in batrachians and fishes. He observes that if the eye of an eel or of a frog be extracted from the orbit, the surrounding tissue dissected from it, and it be then exposed to the action of light, the pupil is shortly observed to contract; and if the eye is then placed in the dark, the pupil dilates again. By such means from fifty to a hundred contractions and dilatations may be induced within an hour. From experiments,—the priority of which has been attributed to Fontana,—it would appear that by thus operating upon the eyes of batrachians and eels, extracted from the orbits and cleaned, different results are obtained from those observed when the experiment is performed on eyes left in the orbit, in warm-blooded animals or man. When the light only acts on the retina, the iris remains immovable; but when the light

1042 BIRTHS AND DEATHS, METEOROLOGICAL SUMMARY, ETC.

acts only upon the iris itself, movements of this structure are excited. In the eyes of living batrachians left in the orbit, the iris moves at first by the action of light on its own tissue, and then by its action on the retina and nervous centres. The theory of the movements of the iris, such as result from the experiments of Fontana, Herbert Mayo, &c., appear to be true with regard to warm-blooded animals and to reptiles. Of the different rays of light, the most luminous ones appear to act the most energetically on the iris of the eyes of batrachians and fishes, extracted from the orbit. If the iris can be directly excited by light in certain animals, and not in others, the circumstance appears due to a difference in the thickness of this membrane, and especially of its anterior layer of pigment and vessels. From the fact of light thus being enabled to act directly on nervous and muscular fibres when spread out into a fine membrane, as in the retina and iris, there is reason to believe that, if this agent does not act on other muscles and nerves of the animal economy, it is because they are not expanded into a membrane, which is probably an essential condition in order that it may act on them. The pupil of a mammiferous animal's or bird's eye, extracted from the orbit, dilates or contracts by the effect of change of temperature, according as it was contracted or dilated previous to the experiment. In this manner at least twenty contractions or dilatations may be induced in the course of an hour. It is not necessary to suppose that vascular turgescence is added to the contraction of the circular fibres of the iris in order to produce considerable narrowing of the pupil, since in eyes extracted from the orbit the narrowing may be as great as during life; and this in warm-blooded animals as well as in reptiles, amphibians, and fishes.—*Comptes Rendus*, 4th October, 1847.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	29.61
" " Thermometer	46.5
Self-registering do. max.	min. 29°
" in the Thames water — 44°	— 48°
a From 12 observations daily. b Sun.	

RAIN, in inches, 0.85: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 3.4° below the monthly mean.

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Nov. 27.

BIRTHS.		DEATHS.		Av. of 5 Aves.	
Males....	613	Males....	819	Males....	528
Females..	576	Females..	859	Females..	518
	1189		1677		1046

DEATHS IN DIFFERENT DISTRICTS.

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	179
NORTH—St. Marylebone; St. Pancras; Islington; Hackney	267
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London	319
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar	504
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich	408
Total	1677

CAUSES OF DEATH.

	1677	Av. of 5 Aves.
ALL CAUSES	1677	1046
SPECIFIED CAUSES	1676	1039
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	415	211
<i>Specific Diseases, viz.—</i>		
2. Dropsy, Cancer, &c. of uncertain seat	150	104
3. Brain, Spinal Marrow, Nerves, and Senses	174	187
4. Lungs and other Organs of Respiration	634	333
5. Heart and Bloodvessels	32	34
6. Stomach, Liver, and other Organs of Digestion	95	74
7. Diseases of the Kidneys, &c.	16	9
8. Childbirth, Diseases of the Uterus, &c.	11	14
9. Rheumatism, Diseases of the Bones, Joints, &c.	10	7
10. Skin, Cellular Tissue, &c.	6	2
11. Old Age	87	65
12. Violence, Privation, Cold, and Intemperance	25	29

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	29	Convulsion	51
Measles	96		
Scarlatina	49	Bronchitis	196
Whooping-cough	44	Pneumonia	170
Influenza	36	Phthisis	153
Typhus	67	Dis. of Lungs, &c.	20
Dropsy	16	Teething	7
Sudden deaths	13	Dis. Stomach, &c.	6
		Dis. of Liver, &c.	12
Hydrocephalus	28		
Apoplexy	28	Childbirth	8
Paralysis	23	Dis. of Uterus, &c.	2

REMARKS.—The total number of deaths was 631 above the weekly autumnal average.

NOTICES TO CORRESPONDENTS.

M.D., Great Coram Street, Brunswick Square.—The communication on Cholera will be inserted in the following number.

We have to acknowledge the receipt of communications from Mr. Synnot, Mr. W. Gosse, Mr. Ghymes, Dr. Charles Bell, and Mr. Craig.

"Looker on" will be inserted.

Various papers are unavoidably postponed.

Lectures.

LECTURES

ON THE

DISEASES OF INFANCY AND
CHILDHOOD,

Delivered at the Middlesex Hospital.

BY CHARLES WEST, M.D.

Physician-Accoucheur to, and Lecturer on Midwifery at, the Middlesex Hospital, and Senior Physician to the Royal Infirmary for Children.

LECTURE XVII.

Pneumonia continued—Symptoms of pneumonia frequently present a mixed character when it supervenes on bronchitis—Idiopathic pneumonia—approach of first stage generally gradual—characteristic peculiarities in mode of sucking and of respiration—attack sometimes sudden. Symptoms of second stage—results of auscultation—reasons for rarity of true pneumonic crepitus. Symptoms of third stage—convulsions often precede death—their import—occasional imperfect recovery—auscultatory phenomena of this stage.

Nature of modifications in symptoms produced by association with bronchitis. Diagnosis from bronchitis—pleurisy—hydrocephalus—remittent fever—intestinal disorder during dentition.

Treatment—Depletion, general and local; rules for each—Tartar emetic—limitations as to its use. Mercury—its importance—danger of salivating very slight. Diet—antiphlogistic in the early stages—caution as to sucking—stimulants often needed in advanced stage. Blisters in general not desirable.

It was stated in the last lecture, that the supervention of inflammation of the substance of the lungs constitutes one of the chief dangers of infantile bronchitis. Pneumonia, however, is not to be regarded as being invariably a secondary affection; for while the disease of the air-tubes is in some cases but trivial, the pulmonary substance is the seat of serious inflammation: and in other instances, the air-tubes are altogether unaffected, or at least are involved only in common with the other constituents of the lung. In either case, there are peculiarities enough, both in the symptoms observed and in the treatment required, to render the separate study of pneumonia indispensable.

When pneumonia supervenes, as it by no means seldom does, on previous catarrhal symptoms, the disease often comes on in-

sidiously, and develops itself so gradually out of the preceding trivial ailments that it is not possible to determine the exact date of its attack. At other times, indeed, there is a sudden and well-marked increase of the fever and dyspnoea, and an aggravation of all the symptoms, sufficient clearly to point out the date of the supervention of the pneumonia. But, even though this should be the case, yet if there were much bronchitis previously, the affection of the air-tubes will often mask that of the lung to some degree: and the case not presenting the symptoms either of pure bronchitis or of unmixed pneumonia, will assume some of the characters of both, and merit, both by the phenomena attending it during life, as well as by the appearances found after death, the name of "bronchopneumonia." Cases of this mixed character occur most frequently during the period of teething, when the mucous membranes are especially susceptible. We will return to notice some of their peculiarities hereafter; but will first examine the symptoms that attend a case of idiopathic pneumonia, where the pulmonary substance has been affected from the outset, and has not merely become involved by the extension to it of mischief commencing in the bronchi.

In almost all of these unmixed cases, a condition of general feverishness, exacerbated towards evening, with fretfulness and pain in the head, precede the more marked symptoms. The child is either restless at night, or, if it sleep, its repose is unsound: it talks in its sleep, or wakes in a state of alarm. Sometimes from the very first, at other times soon after the appearance of these febrile symptoms, cough comes on; at first, short and hacking, frequently not causing the child any uneasiness, and so slight as scarcely to excite the notice, and not at all to awaken the anxiety of the parents. Loss of appetite and increase of thirst are early observable; the bowels are usually constipated, and vomiting is not infrequent, especially in infants at the breast. The tongue and lips are at the same time of a florid red; the tongue is less moist than usual, and is generally coated in the middle with a thickish white fur. In these symptoms, indeed, there is but little to mark the real nature of the case, or to point to the organ whose disease has kindled the fever in the system; for the slight cough, if not overlooked, may yet be attributed to irritation of the bronchi, sympathetic with derangement of the stomach or intestines. The respiration, too, is not always much hurried at this early period, while, in the young child, both its frequency and that of the pulse are much modified by position; and the results of auscultation are not uniform, and may sometimes afford no

information at all. Even now, however, there are some signs which to the attentive observer will convey much information, and information all the more valuable from our being furnished with it chiefly in those young infants, in whom the diagnosis of disease is often attended with so much difficulty. The seat of the mischief is shown to be in the respiratory organs, by the child no longer breathing through the nares, as it does in health, while the tongue is applied to the roof of the mouth; but by its breathing through the open mouth also, whence the tongue early in the disease acquires an unusual degree of dryness. This same inability to respire comfortably through the nares causes the child to suck by starts: it seizes the breast eagerly, sucks for a few moments with greediness, then suddenly drops the nipple, and in many instances begins to cry. As the disease advances, these peculiarities in the mode of sucking and of respiration often become more striking, but it is at the onset of the disease that they are most valuable, since then we have fewer indications to lead us right.

It is not, however, thus gradually that pneumonia always comes on, for sometimes a child who had gone to bed well, or merely a little poorly, wakes in the night in a state of alarm, refusing to be pacified, with a flushed face and burning skin, and hurried breathing and short cough. This sudden supervention of pneumonia is not so often met with among infants at the breast as among children from two to four years old. Often, though not always, this severe onset of the disease has appeared to depend on the pneumonia being associated with extensive inflammation of the pleura; but sometimes the symptoms which at first seemed so threatening soon subside, and the disease, in its subsequent stages, presents no peculiarity, and is not by any means remarkable for its severity.

This *first stage* of pneumonia passes, for the most part, by degrees into the *second*, in which the nature of the affection is generally obvious to all. The momentary cheerfulness which before existed has now passed away; infants now no longer wish to be removed from the cradle, or from the recumbent posture in their nurses' arms, and older children have quite lost all interest in their play; they become drowsy, ask to be put to bed, and cry if taken up. The hurry of the respiration is now abundantly evident, the *ala nasi* are dilated with each inspiration, the abdominal muscles are brought into play to assist in its performance, and any change of posture renders the breathing more laboured and more hurried. The cough has become much more frequent, it is still hard, sometimes is evidently painful, so that the child cries with each cough; at other times it

is an almost constant short hack. The bright flush of the face, and the florid tint of the lips, have gone, but the heat of skin continues, for the persistence of an almost unvarying high temperature throughout its course, is, as M. Roger has shown, one of the characteristics of the pneumonia of the child as well as of that of the adult. It is a pungent heat, which becomes more sensible the longer the hand is kept in contact with the surface; and so great is the elevation of temperature that M. Roger found it average almost 104° Fah. in ninety-seven experiments, while in some cases it greatly exceeded this degree. Though so intense, however, this heat is unequal at different parts, the extremities being cool, or even cold, while the body is hot; but there is no moisture on any part of the skin. The face now assumes a puffed, heavy, but anxious appearance, and when the child is very young, or the pneumonia very extensive, the lips put on a livid hue, which is also very evident around the mouth, while the face generally is pale. The thirst generally continues very urgent, but children at the breast still vomit the milk. This is apparently owing to their thirst being so urgent as to lead them to suck too greedily, and thus overload their stomach, since while they generally vomit almost immediately after leaving the breast, they do not reject small quantities of food given them from a cup or spoon. The disease of the lungs now betrays itself most strikingly in children at the breast, for as often as they attempt to suck, the respiration becomes at once greatly hurried, they drop the nipple, panting, from their mouth, or, having seized it, have not breath sufficient to make the vacuum necessary to bring the flow of milk.

The results of auscultation, though variable, are now sufficiently obvious. Crepitation is now heard, often in both lungs, and generally in their lower and posterior parts; seldom, however, the minute crepitus such as we hear in the pneumonia of the adult, but that sound known as the sub-crepitant r le. This comparative rarity of true pneumonic crepitus in the inflammation of the lungs in infancy is a point not to be lost sight of; often, however, if you keep your ear to an infant's chest, and wait till it takes an unusually deep inspiration, you will hear the true crepitus of pneumonia just for a moment, when the air enters the pulmonary vesicles, and then again you will lose it when the child breathes as it was doing before, and you will hear only the sub-crepitant r le. If the inflammation have attacked only one lung, you will perhaps be struck by the loud puerile breathing in the healthy organ, which is thus compelled to perform a double function. If both be involved, you may almost overlook the dis-

case, since you have not the aid afforded by contrast, and, as sometimes happens, the mischief on the one side is so far advanced as to cause bronchial breathing, while on the other side crepitation alone is audible. This bronchial breathing is sometimes heard associated with sub-crepitant r le, or with large crepitation, while at other times the ear detects nothing but the whiff of air through the larger air-tubes; and often this alone is audible on an ordinary inspiration, while on a deep breath being taken, the sub-crepitant r le will be at once perceptible. In the child we lose all the information which, in the adult, is afforded by the different modifications of the voice sound, for the shrill or querulous tone of a suffering child, and the words often uttered in very different keys, yield, even when the child is old enough to talk well, results far too uncertain to be trustworthy.

Percussion sometimes yields a very manifest dullness on the affected side; and this dullness is usually most evident in the infra-scapular region. At other times, however, no such marked results are afforded, but the lower parts of the chest yield a somewhat duller sound than the upper, and the impression communicated to the finger is that of greater solidity below than above the scapula. This last sign is often very valuable, since it may be perceived at a time when the ear cannot clearly detect any actual dullness on percussion.

Death may take place in this, the second stage of pneumonia, if a very extensive portion of lung have been involved in the disease, or if it be associated with much inflammation of the pleura, or if the pneumonia have been grafted on severe bronchitis. The pneumonia which supervenes on measles, or which comes on in a child debilitated by previous illness, sometimes terminates unexpectedly in this stage, and on an examination of the body after death, the lung is found scarcely to have passed beyond the first stage of pneumonia, except in a few portions of but limited extent; though still larger tracts will probably be found in the state of carnification, and to the sudden supervention of this condition the fatal event is probably in great measure due. It is important, too, to bear in mind that in weakly children a pneumonia of even very small extent will often prove fatal; hence the great importance of watching most sedulously against all those intercurrent affections of the lungs, which come on in the course of diarrhoea, measles, remittent fever, &c.

But the pneumonia may be free from any of the above-named complications, and then, if unchecked by treatment, it will pass into the *third stage*. The respiration now becomes more laboured, and though its fre-

quency is sometimes diminished, it will be found to have become irregular; several short and hurried inspirations being followed by one or two deeper, and at longer intervals, and these again by hurried beathing. The cough sometimes ceases altogether, or if not, it is less frequent, and looser, since it is now produced by the child's efforts to clear the larger air-tubes from the accumulating secretions. The voice is often lost, the patient speaking only in a hoarse whisper; while many children who were just learning to talk, will often maintain complete silence, as if conscious that they have no breath to waste in words. The face looks sunken, the extremities are cold, and though the trunk retains its high temperature almost to the last, yet the skin often loses somewhat of its previous dryness, and clammy sweats break out, especially about the head. The pulse is extremely frequent and small, and the beats so run into each other that it is almost impossible to count them. The child is sometimes very restless at intervals, tossing about from side to side as much as its reduced powers will permit; but it usually lies in a state of half consciousness, though sensible when spoken to, and fretful if disturbed. If raised hastily from the recumbent posture, or if put to the breast, the great increase of dyspnoea which is immediately produced, shows how seriously the respiratory organs are affected. In many cases, too, the livid hue of the face and of the nails is a further proof of the great impediments which exist to the decarbonization of the blood; and once I saw purpurous spots appear on the arms and hands thirty-six hours before the death of a previously healthy child of a year old, in whom an attack of idiopathic pneumonia terminated fatally on the seventeenth day. This condition seldom lasts above two or three days; for either life becomes gradually extinct, without the supervention of any new symptom, or convulsions occur, which are followed by fatal coma, or the child recovers from it for a few hours only to suffer a second attack of convulsions, and a return of coma, in which it dies. It can scarcely be necessary to remind you of what was said some time since with reference to the import of convulsions, and to their being in many cases merely a token of disturbance of the function of the brain, such as delirium is in the adult. The former symptom in the child, and the latter in the adult, betokens in a case of pneumonia that the brain is suffering from the circulation through it of imperfectly aerated blood.

The third stage, however, does not always advance thus uninterruptedly to a fatal issue, but a kind of imperfect recovery sometimes takes place. A diminution is obvious in the more alarming symptoms; the patient be-

gins to express some desire for food, as well as for drink, and even has occasional gleams of cheerfulness. The cough, which in many instances had almost or altogether ceased, returns, but is short and hacking, although there is sometimes a good deal of mucus in the larger air-tubes. The dyspnoea is no longer urgent, though the breath is habitually short. The skin is hot, dry, and hard, and evening exacerbations of fever often occur; the tongue is red, dry, and sometimes chapped, or presents small aphthous ulcers at its edges; diarrhoea is not infrequent; the child wastes daily, and dies in the course of a week or two, worn out and exceedingly emaciated.

The auscultatory signs of this third stage of pneumonia are in the main those of the second stage, except that the bronchial breathing usually becomes both more distinct and more extensive, occupying situations where either the sub-crepitant râle, or even large crepitation, had previously been heard. As it extends, too, it becomes audible in front as well as behind, and both it and dullness on percussion may be perceived in the infra-mammary as well as in the infra-scapular region, to which, at first, they are almost always limited. This bronchial breathing is generally much more extensive on one side than on the other, and sometimes it is heard throughout the whole posterior part of one side of the chest; but I never found bronchial breathing confined to the upper parts of one lung, except in cases where there existed previous tubercular disease of the organ, and then the tissue may become solidified under the influence of an amount of disease which otherwise would be inadequate to produce this result.

The symptoms that attend the third stage of the disease usually are the result of the lung having passed into the state of suppuration. I say usually, for sometimes recovery eventually takes place even from a condition apparently desperate, and in such cases the degree to which disorganization of the lung had actually advanced must always remain uncertain.

The results of auscultation do not help us, any more than in the adult, to answer this question, while we are deprived almost entirely of that information which in the grown person is afforded us by the changes in the appearance of the sputa. In some cases of rapidly fatal pneumonia I have seen a frothy secretion collect about the mouth, but this was evidently not furnished by the air-tubes, but was merely the saliva which the child was unable either to spit out or to swallow. The cough of pneumonia being generally short and not paroxysmal, we have not so much chance of seeing the sputa as even in the case of acute bronchitis, and children even of 5 or 6 years old will but seldom spit

out the matters that they may expectorate, but almost always swallow them.

When resolution of a hepatized lung takes place, the changes in the physical signs of the disease are much the same as are perceived in the adult. I have not, however, in any instance detected a return of true pneumonic crepitation, but sub-crepitant râle in most cases became audible, and in a few instances large crepitation. In either case mucous râle was eventually heard, and it often continued for many days after the lung had in other respects recovered its natural condition, apparently much as in the pneumonia of the adult; a prolonged expiration often persists for a long time after all the other signs of disease have disappeared.

At the commencement of this lecture reference was made to cases in which the symptoms of pneumonia are modified by those of the bronchitis with which it is associated. In such cases there is from the very outset a marked degree of dyspnoea and distress, and the face presents from the first a livid hue. The cough is less short than in simple pneumonia, but it comes on in paroxysms which greatly distress the patient; the respiration is more hurried and more irregular, and this irregularity comes on at an earlier stage of the disease. Large crepitation and the sub-crepitant râle are generally heard very extensively in both lungs, but the true pneumonic crepitation is unusual. A preponderating affection of the lower lobes is often not perceptible, and since these cases usually tend to a rapid termination, death sometimes takes place before either dullness on percussion, or bronchial breathing, has become distinctly perceptible.

Such are the characters generally presented by pneumonia in early life, and these are usually so well marked as to render it impossible either to overlook the disease or to mistake its symptoms for those of some other malady. This, however, is not invariably the case even when the inflammation of the lungs occurs as an idiopathic affection, while in those instances in which it comes on in the course of other diseases, it very often remains latent, and much acuteness of perception, as well as much patient observation, are necessary for its detection. We will pass over for the present the consideration of secondary pneumonia, since to understand all the varieties that it presents would require a previous acquaintance with those diseases in the course of which the inflammation of the lungs supervenes. When we come to the study of whooping cough, croup, measles, remittent fever, &c., I will endeavour to point out the period at which, in each of these maladies, pneumonia is most to be apprehended, and the symptoms that indi-

cate its attack ; but to-day we will confine our notice to those cases in which the inflammation of the respiratory organs occurs as an idiopathic affection.

The points of difference between *pneumonia* and *bronchitis* have already been dwelt on too fully for it to be necessary to recapitulate them. In many cases they are too obvious to admit of your falling into error, but in others they are so shaded off that it is difficult to determine whether the characters of the one or of the other predominate, and we are forced to conclude that the two exist together, the one obscuring the otherwise well-marked features of the other.

In the child, as in the adult, some degree of pleurisy exists in a large proportion of cases of pneumonia, though sometimes so slight as to be scarcely noticed, whilst in other cases, though a little friction sound may be heard for a short time, yet it is evident that the danger to life is occasioned by the mischief in the lung, and not by the affection of the pleura. Sometimes, however, inflammation of the pleura is the chief, if not the sole, cause of the patient's danger, and hence it is desirable to know, even at the outset, whether the lung or its investing membrane is the part chiefly affected.

An attack of *pleurisy* is much oftener marked by a complaint of severe pain in the chest, than is an attack of pneumonia, or if the child be unable to express its feelings the seizure is not infrequently announced by violent and continued screaming. Sympathetic disturbance of the brain is more frequent and more severe at the onset of an attack of pleurisy than of pneumonia, and the attendant restlessness greater. Auscultation, too, fails to discover the crepitant or sub-crepitant râle which characterises pneumonia, but air enters the lung on the affected side much less freely than on the other, and a friction sound may perhaps be distinguished, though this is by no means invariable, and even when present it may easily be mistaken for rhonchus. It may be laid down as a rule, subject to but few exceptions, that whenever a child is suddenly seized with symptoms which, while they indicate some affection of the lungs, are yet unattended with the auscultatory signs of pneumonia, the disease from which it is suffering is pleurisy, and the probability is rendered almost a certainty, if, while the child bears percussion on one side of the chest, it cries and struggles on the slightest attempt at percussion of the opposite side.

The error of taking a case of pneumonia for one of pleurisy, however, or the opposite, is of comparatively little moment ; but there are other diseases for which pneumonia may be taken, where the error of diagnosis

will lead to serious, and perhaps fatal, mistakes in treatment.

These mistakes, too, may be made at almost any stage of the disease. At the commencement pneumonia may be taken for *incipient hydrocephalus*. The vomiting, the pain in the head, the restless nights, with talking in the sleep, which attend the onset of almost all the acute affections of childhood, the fever, and the constipated state of the bowels common to both diseases, lead to this error. The cough in some cases of pneumonia is so slight as scarcely to be noticed, while even if present it may be taken for that sympathetic cough which is sometimes present in the early stages of hydrocephalus, and the child, if questioned, may complain of his head, and of nothing else. But still there are circumstances which would lead the attentive observer, even independently of auscultation, to detect the real nature of the case. The vomiting that usher in an attack of pneumonia, though sometimes violent, seldom continues long, and is unattended with that permanent nausea and irritability of the stomach which are so marked in the first stage of hydrocephalus. The evacuations in pneumonia are natural ; the tongue is of a much more vivid red than in hydrocephalus ; the pulse is much more frequent, the heat of skin far greater, and more remarkable on the trunk than about the head, and the thirst is generally urgent. If these indications, however, be overlooked at the commencement of the attack, and if auscultation, by which the error might still be set right, be neglected, it is probable that each subsequent occurrence will be misinterpreted, and that the real nature of the disease will not be understood until it is revealed by the post-mortem examination. More or less sympathetic affection of the head is seldom wanting in pneumonia to confirm the preconceived erroneous notion ; while, as the child grows worse, the difficulties in the way of making a careful auscultation increase. Convulsions sometimes occur even several days before the patient's death, and the head symptoms may appear, especially to a prejudiced observer, to be much more striking than any which indicate affection of the lungs.

It sometimes happens that the sympathetic disturbance of the stomach and bowels is so considerable as to obscure the chest symptoms, and the case is taken for one of enteritis, or perhaps, if the heat of skin and sensorial disturbance are considerable, for one of remittent fever. The vomiting at the outset of the disease, the pain referred to the abdomen, with the evident increase of discomfort on pressure, the red tongue, with its disposition to dryness, and the diarrhoea that exists in these rather exceptional cases

of pneumonia, are the circumstances which tend to lead into error, and this error may be confirmed on the practitioner finding that at least temporary relief follows the application of leeches and poultices to the abdomen. With reference to the complaint of pain in the belly which seems often to have a large share in inducing this error, it must be remembered that the statements of children with reference to the seat of pain are very vague, and that they frequently speak of the belly when they mean the chest, while the impediment to the descent of the diaphragm occasioned by pressure on the abdomen, especially if this pressure be either sudden or considerable, will almost always excite expressions of uneasiness when the organs of respiration are in any way affected. It is in careful auscultation that you will find your chief safeguard against these mistakes; but you will find besides, that, by accustoming yourselves to look not at one or two prominent symptoms only, but at the relation which each bears to the other, many of the chief difficulties in the way of forming a correct diagnosis will disappear.

It may perhaps seem to you that much of this is very dry and rather needless detail, but unfortunately my own case-books would enable me to illustrate each of those errors of diagnosis against which it is my endeavour to guard you. One more caution I would offer you, and that is, not to overlook the *pneumonia* which sometimes comes on in children while teething. Unless you be on the watch for it, its early symptoms will probably fail to excite your apprehension, since they will be regarded as the result of that sympathetic irritation of the air-tubes which so often accompanies dentition, and the time for action will thus be allowed to pass unemployed. The disease comes on most frequently in weakly children, is unattended by much constitutional reaction, and often runs a somewhat chronic course, while its nature is further obscured by the tendency to diarrhoea which exists during dentition, and which is now excited by the thoracic affection. This often becomes the most striking symptom, and all means are employed to suppress it, and to check the vomiting which generally attends it. These efforts, however, are unavailing; the child wastes daily, and its skin hangs in wrinkles about its attenuated limbs, while the abdomen becomes tumid from the collection of flatus in the large intestines, and tender on pressure, and the tongue grows red, dry, and chapped, or covered with aphthous ulcers. The cough now perhaps attracts notice, but both it and the bronchial breathing in the lungs are probably looked on as indications of phthisis, and the doctor consoles himself with the belief that he has failed to cure the disease because it was

irremediable. At last the child is worn out, and dies, and great is the surprise to find no tubercle in any part of the body, no disease in the intestines, but pneumonia, with purulent infiltration in both lungs,—a disease which ought to have been detected, and which probably might have been cured.

We come now, in conclusion, to the consideration of the *treatment* of pneumonia in children. The main principles that guide us are the same as in inflammation of the lungs in the adult, and our chief reliance is placed on the same remedies in both cases—namely, depletion, calomel, and tartar emetic.

You will find that many of the continental writers on the diseases of children are greatly opposed to the abstraction of blood in cases of infantile pneumonia, and that some even assert that it invariably debilitates the system, and accelerates the patient's death. This opinion, however, has been formed by the observation of those secondary pneumonias which are of such frequent occurrence among the inmates of the Children's Hospital at Paris; and therapeutical conclusions deduced from cases of so peculiar a kind as are there presented cannot be framed into rules for the general guidance of our conduct. But much misapprehension has also arisen from the confounding the condition of collapse of the lung with that of its solidification from true inflammatory action, and the mistaken pathology has led to mistaken treatment. In the management of cases of idiopathic pneumonia occurring in previously healthy children, whatever be their age, *depletion* is as important a remedy as in the adult; nor will the most energetic employment of any other antiphlogistic measures enable us safely to dispense with its use. In a healthy child of two years old a vein may be opened in the arm, and ʒiv. of blood may be allowed to flow, provided that faintness be not earlier produced, without there being any reason for us to apprehend that the plan we are adopting is too energetic. It often happens that the child faints before this quantity of blood has been drawn, while in other cases not above one or two ounces of blood can be obtained. Still, whenever the patient is seen at the commencement of the attack, general depletion is desirable, even though it should be necessary to follow it up by local bleeding; for the immediate effect which it produces is greater, and the quantity of blood abstracted by it is definite; while, if both the nurse and the medical attendant understand how to manage children, it may be so conducted as to cause them but little excitement or alarm. If but very little blood could be drawn from the arm, or if, as is not seldom the case with infants under two years of age, it were not possible to find a vein, depletion

must be accomplished by means of leeches, which, for reasons already stated, it is desirable to apply beneath the scapulæ. How great soever may have been the relief which followed the first bleeding, it is not always permanent; and hence the child should be seen again in from six to eight hours, and if the symptoms appear to be returning with anything of their former severity, depletion must be repeated, though here local blood-letting is to be preferred to venesection, even in cases in which bleeding from the arm had been resorted to in the first instance. It must never be forgotten, that in the child, as well as in the adult, no subsequent care can make up for the inefficient treatment of the early stage of pneumonia: if the first twenty-four hours are allowed to pass while you are employing inadequate remedies, the lung, which at first was merely congested, will have become solid, and recovery, if it take place eventually, will be tardy, and perhaps imperfect. On the other hand, cases that set in with the greatest severity sometimes appear to be at once cut short by free depletion, the violent symptoms being arrested, and recovery going on uninterruptedly almost without the employment of any other remedy.

In the treatment of the pneumonia of the adult we are accustomed to follow up the advantages gained by depletion by the administration of *tartar emetic*, and, under proper restrictions, the remedy is no less valuable in early life. Given in doses of $\frac{1}{4}$ th of a grain every ten minutes till vomiting is produced in the case of a child of two years old, and continued every hour, or two hours afterwards for a period of twenty-four or thirty-six hours, it subdues the fever and abates the dyspnoea in a most remarkable manner, often rendering a repetition of depletion unnecessary, and sometimes speedily removing all signs of the disease. It is not safe, however, in the great majority of cases, to place our dependence entirely on the administration of antimony. In cases of secondary pneumonia, especially if the affection of the parenchyma were preceded by well-marked bronchitic symptoms, antimony may sometimes be given at once without having recourse to the abstraction of blood previously, but, in pure idiopathic pneumonia, depletion either general or local ought almost always to precede its use. When antimony does good it generally gives an earnest of that good within a few hours from its first administration, and the production of some sensible effect, such as vomiting or very decided nausea, has appeared to me to be a condition of its utility; unlike what we observe in the adult, in whom the good results which it produces are sometimes independent of any appreciable influence on the general condition of the patient. When once com-

plete tolerance of the medicine has been established, our subsequent conduct must be determined by the results of auscultation. Should that inform us that the physical condition of the lung has greatly improved, as well as the general state of the patient, the use of the remedy may be persevered in at somewhat longer intervals. If the signs of inflammation be advancing, and are perceptible in portions of lung previously free from disease, mercury must be employed, which may be combined with small doses of antimony, while large doses of that remedy may still be given to combat any sudden increase of fever or dyspnoea that may chance to supervene. If, notwithstanding a manifest diminution of the fever and reduction of the dyspnoea, bronchial breathing should have become distinctly audible, mercurials must at once be substituted for the antimony; and the existence in any case of extensive or well-marked bronchial respiration should be regarded as of itself contraindicating the antimonial plan of treatment. It is hardly necessary to state, that it is not my intention to say, that after the supervention of bronchial respiration, antimony ought never to be given, but only that it should not be employed except in small doses and in combination with other remedies.

In cases where the symptoms do not set in with such violence as to indicate the necessity for very large doses of antimony, or in which the disease has passed that stage when antimony so given is likely to be beneficial, *mercurials* may be used with great advantage. In cases of the former kind, from $\frac{1}{3}$ of a grain to a grain of calomel combined with gr. ij. or gr. iij. of James's powder, may be given every six hours to a child two years old. If the case be of a graver kind, and bronchial breathing has become perceptible notwithstanding depletion and the administration of tartar emetic, the calomel must be given more frequently, as every four or three hours, combined with small doses of Dover's powder and tartar emetic, if the child be not so depressed as to render the use of the latter medicine inexpedient. Sometimes the combination of antimony with the mercurial is at first well borne, but afterwards it becomes expedient to discontinue it on account of the sickness that it sometimes produces, or on account of the debility of the patient. The diarrhoea which the calomel excites may usually be checked by increasing the dose of the Dover's powder. There are some troublesome cases, however, in which the stomach or bowels are so irritable that scarcely any medicine can be borne, and in them, as well as in cases of neglected pneumonia in which the proper time for active treatment has been allowed to pass by and the child has become exhausted, while a large extent of lung is impervious to air, much benefit sometimes

follows the persevering use of mercurial inunction. In infants and children under five years of age, the gums hardly ever become affected by mercury, even though most energetically employed, and it has never yet occurred to me to meet with an instance of profuse salivation, or dangerous ulceration of the gums. Such accidents, however, do now and then occur, and have been known to terminate in fatal gangrene of the cheek, or necrosis of the jaw. On this account, therefore, you must watch the condition of the gums in infants and children to whom you are administering mercury, just as you would do in the case of the adult, and diminish or discontinue the remedy on the first indication of their being affected.

The diet of children in the early stages of pneumonia should be most sparing; and infants not weaned should have some less nutritious food than the mother's milk, which their thirst will otherwise lead them to take more abundantly even than when they are well. If the pneumonia be severe, it is better to give even the mother's milk with a spoon, than to allow the infant to suck, since the very act of sucking is injurious, and taxes to the utmost the respiratory function, the organs of which it is desirable to keep in as unexcited a state as possible.

But though the treatment of inflammation of the lungs requires a most strict antiphlogistic regimen in the early stages of the disease, yet in many cases there arrives a period in which a spare diet is no longer suitable, in which your main efforts must be directed to support the constitutional powers rather than to subdue the local inflammation. If you forget this, it may happen to you to overcome the mischief in the chest, but to lose your patient with head symptoms, brought on by carrying too far, or continuing too long, the very treatment which within proper limits is most salutary. No point in the management of the disease is more difficult than the seizing the exact moment when the employment of stimulants becomes necessary; and no general rule can be laid down for regulating their use. If, however, the patient were beginning to be much purged, if the respiration were growing more laboured and irregular, though diminished in frequency, and if the pulse were becoming more frequent, and above all smaller and smaller, it is high time to resort to their use. Wine is as indispensable in such cases in the pneumonia of the child as in that of the adult, and it may be necessary to give it even to infants at the breast. Ammonia may also be advantageously administered in this stage of the disease, either in a mixture with the decoction of senega, or dissolved in milk, which conceals its disagreeable pungency better than any other vehicle. If diarrhoea do not exist, strong beef-tea or veal-broth

is the best form in which nutriment can be given; but if the bowels be relaxed, arrow-root, or the *decoction blanche* of the French hospitals, should be substituted for it.

In conclusion, it may be well to offer a caution with reference to the employment of blisters,—a measure to which we often have recourse with advantage during the resolution of pneumonia in the adult, but which, as a general rule, is not advisable in young children whose lungs have been solidified by the disease. Stimulating liniments may be employed with advantage: they produce very evident good, and are unattended by the risk that always accompanies making a breach of the surface in a young child exhausted by previous illness. The risk of such sores taking on an unhealthy character appears to be greater after inflammation of the lungs than after almost any other disease; and it may be added that the risk is still greater in those cases of secondary pneumonia that supervene on measles.

A LECTURE ON EPIDEMIC CATARRH, OR INFLUENZA.

Delivered at the York Medical School,

By THOMAS LAYCOCK, M.D.

Physician to the York Dispensary, and Lecturer on the Theory and Practice of Medicine at the York School of Medicine.

Description of the symptoms—Course and termination—Ages affected—Influence on general mortality—Universality of prevalence—Alleged causes of the epidemic examined—Vicissitudes of temperature, and of atmospheric changes—Telluric changes and miasm—An infectious element—To be classed nosologically with rubella and pertussis—Probable source of the infectious element—Estimate of the symptoms—The non-inflammatory caused by the poison per se—Those complicating the latter dependent on inflammation or pre-existing disease—Treatment.

We from time to time discuss the nature and treatment of diseases as they arise, and not according to the ordinary arrangement, knowing that comments are more interesting and more easily retained on the memory when thus delivered with the subject, as it were, before us.

It is nearly eleven years since we had influenza epidemic in Great Britain, and it may be some years before it again occurs. In accordance with my wish, you have supplied me with such histories as will enable us to describe the affection now prevalent.

In the ordinary cases you have the ordi-

nary symptoms of catarrh, but in an exaggerated degree. In a female aged 25, of the lymphatic temperament, attacked on the 28th of November, there were violent rigors, splitting headache, aching pains in the limbs, sore throat, and great difficulty in swallowing, and diarrhoea the day before. The eyes were watery and slightly inflamed; one side of the face red and tumid; the nose discharging a thin mucus; the tongue white, and furred at the edges; the pulse 94. The reporter has omitted to mention what must no doubt have existed—namely, cough and sneezing. On Monday the shiverings had ceased, together with the headache, but the throat was sorer, and a submaxillary gland enlarged. On the third day the muscular pains abated, and the throat was easier. On the fourth day, convalescence.

Another patient, attacked on Tuesday, whose case is reported by another member of the class, presented symptoms closely similar to the preceding, but the pulse is described as small and feeble; and the strength as prostrated, the chest oppressed, and the cough short and frequent. On the third day the pain in the head was relieved; a thin discharge took place from the nose, with spontaneous diarrhoea and profuse perspirations. On the fourth day, convalescence.

In some examples diarrhoea has ushered in the disease; in others there was ischuria or dysuria, and a splitting pain in the back; in others, shooting pains in the sides and chest, and pain and oppression at the præcordia, with frequent sighing; in others the headache was the leading symptom, and there was delirium in a few. Inflammatory symptoms were seen almost exclusively in young children, or the aged with pulmonary disease. The fatal termination of the disease occurs with the symptoms of bronchitis or pneumonia; and it would appear that, in the weekly tables of mortality for the metropolis issued by the Registrar-General, the deaths from the disease have been enumerated under one or other of these heads, but principally under that of bronchitis. Doubtless a few have been certified as asthma, and a few as phthisis, but the majority as bronchitis. The mortality in London has fallen thus:—Of 370 deaths from thoracic inflammation registered in London during the week ending November 27th, 217 were 15 years of age; 79 from 15 to 60 years old, and 74 above 60; so that the deaths under the age of 15 were in the proportion of 55·9 per cent. This does not, however, prove that the population of this age has suffered the most from this epidemic. To ascertain the real influence of age, we should know the proportion of deaths at the several ages, to the living at those ages.

This would involve more calculation than our engagements will permit us to make; but we can form some estimate by comparing the above proportions with those of an ordinary year—that is to say, a year in which the influenza was not epidemic. In the year 1840-41 there died in London of bronchitis, pleurisy, and pneumonia, 8778 persons: of these, 68·6 per cent. were under 15 years of age; consequently, as compared with these years, the mortality of young people during the prevalence of the influenza from thoracic inflammation in the week ending November 27th is 12·7 per cent. lower than the average of that year; and I ought to observe, that the influenza, although not epidemic during the year 1840-41, caused a mortality somewhat above the average. This seems to corroborate the general opinion, that epidemic influenza is the most fatal to the aged. 11 per cent. of the persons dying of thoracic inflammation during 1840-41 were aged above 60. During the week ending the 27th of November the proportion is 20 per cent.; so that here we have again a corroboration of the general opinion.*

The mortality in London during that week was 637 above the weekly average, or 1676 to 1039, an enormous increase, and yet not altogether due to the influenza, if we can rely on the nosological accuracy of the "causes of death." Literally, the increase from that disease is 33 only, but in pulmonary diseases it amounts to 301; and this leaves a great increase to be accounted for. On examining the table, we find there is a greatly increased mortality from zymotic diseases, amounting to 204; the remaining increase is distributed over diseases generally. I am inclined to think that by far the greater part of this increase must be attributed to the influenza. The deaths from typhus are 51 in excess of an average of 36; from measles, 60 in excess of the same average; from diarrhoea and dysentery, 18 in excess of an average of 21. Now it is well known to practical physicians, that although the influenza may not apparently co-exist with typhus and the other diseases I have named, yet that the moment the disease terminates—so soon as the true crisis of the fever occurs—the influenza will supervene and endanger life. In measles, scarlatina, diarrhoea, and dysentery, their sequelæ will predispose to an attack and a fatal termination; and I am of opinion that the primary diseases may be complicated with influenza.

The accounts in the medical journals and the newspapers, and our own experience in

* During the week ending December 4, only 48·1 per cent. of the deaths from thoracic inflammation were under 15 years of age; while 27·9 per cent. were aged above 60 years.

York, shew that the present epidemic resembles its predecessors in the universality of its prevalence and the rapidity with which it affects a population. Willis, describing the epidemic of 1658, uses language quite applicable to the present:—"Suddenly a distemper arose, as if sent by some blast of the stars, which laid hold on very many together; that in some towns, in the space of a week, above a thousand people fell sick together." Within a few days of its first outbreak in York, *whole families* were laid up, and the lists of the practitioners became suddenly and strangely extended. It would not be beyond the mark to estimate the proportion sick in York with it at one time, at one-third of the population: perhaps it would be nearer to say one-half. It is in this respect that influenza, or epidemic catarrh, differs from other epidemical diseases. Small-pox, scarlatina, measles, &c., spread from town to town with much less rapidity, and several months, or even a year or two, will elapse before an epidemical outbreak of these disorders is terminated; but the influenza affects the whole population, from Land's End to John o'Groat's, in a very few weeks, sweeping over the people at once, and raising an unanimous outcry, not only from every corner of our own island, but from the cities and towns of the Continent. Such a remarkable circumstance has excited always a vivid curiosity as to its cause; and, if you look into the old authors and the periodicals of the time of its prevalence, you will be much amused by the hot wordy warfare in which some of our professional brethren have maintained their opinions on this point, making up for proofs by resolute assertions and vigorous contradictions.

The three causes that have been usually assigned for the outbreak of the epidemic catarrh are—1, atmospheric vicissitudes of temperature; 2, the presence of an ærial poison or contagium animatum in the atmosphere, arising from telluric changes: that is to say, from the earth—a sort of miasm or malaria, or infinitely minute vital atoms; and 3, the existence of a contagious or infectious element analogous to that of small-pox, measles, &c. Let us examine the question as to the influence of changes in temperature in producing the disease.

We learn from the weekly tables (and I take this opportunity of saying that there is no country in the world that has such valuable documents as those, and it is only to be regretted that they are confined to the metropolis)—we learn from these that the mean temperature of the week ending November 13th was 9.1° higher than that of the following week, whereas the variation of the mean temperature for the two or three previous weeks was scarcely 1° . During the

week ending November 27th the mean temperature was higher than that of the preceding week by 5.8° . Now this intervening week of low mean temperature—namely, the week ending Nov. 20th—would be that in which the influenza broke out, because the deaths do not occur exactly at the time they are registered; the epidemic commences in one week, the deaths appear in the next or succeeding. At a first glance this would appear conclusive as to the real influence of a great depression of temperature. When we consider the seasons at which the influenza has broke out, the inference is apparently corroborated by some data collected by M. Andral, who states that, of 50 epidemical catarrhs, 22 occurred in winter, 12 in spring, 11 in autumn, and 5 in summer. Yet, upon a more careful consideration of the facts, these inferences prove to be fallacious. With regard to the last epidemic in 1836-37, and which broke out in January, 1837, we find that it commenced with a *rise* in the temperature, from about 32° to 50° , and did not begin to disappear until the latter part of February, when the cold north winds set in. Further, on the 1st November, 1836, the influenza had just broke out at the Cape of Good Hope (Cape Town), being at the most settled and temperate season of the year; and on October 14th it had recently made its appearance at Sydney, New South Wales.

But an equally conclusive proof that a depression of temperature will not alone develop epidemic influenza, is shewn by the diagrams I now show you. During the week ending January 2d of this year, the mean temperature fell above 10° below that of the preceding week, and that was a low mean: in fact, the thermometer on New Year's Day last fell to 19° in London. The consequence was that the deaths from pulmonary diseases rose in the week following from an average of 354 to 611, being only 23 below the influenza mortality of the week ending Nov. 27th last; yet the influenza was not epidemic, only four deaths being registered from that cause to a weekly average of 3.

Again, during the week ending February 13th last, the mean temperature was 25.6° , and the thermometer fell on the 12th to 23.4° . The deaths from pulmonary disease registered in the week following rose to 408 to an average of 354; and again there were only 4 deaths from influenza to a weekly average of 3. Now these are striking facts, and warn us to separate the deaths from diseases excited by a depression of temperature, from those dependent on the influenza itself. The latter may render the former more fatal, but we must allow something for a mixed agency.

Some persons, however, say it is not so

much a change from heat to cold that brings influenza, as a change from cold to heat, or they will say that either vicissitude will induce it. These diagrams shew you, gentlemen, that vicissitude of temperature, from week to week, is the rule in this climate. The lines marking the weekly means are continually shooting up and down; so that, in whatever season influenza appears, and under whatever other circumstances, atmospheric vicissitudes may be demonstrated as accompanying it. I think the time is gone by for such vague generalities as these, and I would suggest to you the propriety of abstaining from an expression of such popular but really unscientific and groundless ætiology.

Electrical changes in the atmosphere have been mentioned as having an important ætiological bearing on the spread or development of influenza, and especially a diminution in electric tension of the atmosphere. It is apparently a remarkable corroboration of this hypothesis, that, from Nov. 4th to the 17th inclusive, nothing was shewn except on the 9th, for three hours in the afternoon, and on the 25th at noon, during rain. On both these days the electricity was negative and the tension moderate, and yet the corroboration is entirely fallacious. Although during almost a whole year nothing like the electrical condition of the atmosphere occurs as noted just now, yet it does occur once; for we find that, during the first three weeks of November, 1846, there were only eight days in which any electricity was shewn, and in some of these it was very weak, and for a short time only. During the week ending Nov. 21 of last year, there were 5 deaths registered from influenza, and during the next week 9, against an average of 2; but there is no increase in the deaths from pulmonary or zymotic diseases; the latter are below the average considerably; the former at par.

Having thus exclusively disposed of atmospheric changes, whether thermal or electrical, as causes of epidemic catarrh, we can better inquire whether there be a miasm or contagium animatum of telluric origin diffused through the atmosphere, and acting as a febrile poison. Now on this point we have nothing stated but vague facts as to fogs, earthquakes, hurricanes, &c.: in fact, no connection that can be reasonably considered in the relation of cause and effect has been shewn, and no approach to proof of the existence of the poison. On the other hand, it would not be difficult (but it is not worth the trouble) to demonstrate by registered facts that all these meteoric and telluric changes have occurred without heralding the influenza, or even coinciding with it.

There remains, then, the third ætiological hypothesis, namely, that there exists a con-

tagious or infectious element analogous to small-pox, measles, pertussis, &c. This hypothesis has received the sanction of distinguished names, and of these the most recent is Cullen, to whose nosology I must refer you for particulars. The arguments in proof of this proposition are derived from analogy, and are therefore peculiarly liable to be fallacious. In the first place it is seen to appear and disappear like other epidemics; there are first a few scattered cases, like the drops that herald the shower, then a continual increase to a climax, and then a gradual decrease, until at last only a few isolated cases occur. But this is just what occurs with variola, rubella, and scarlatina,—cholera I leave out, because many think it neither contagious nor infectious; and so, also, yellow fever, the plague, &c. Secondly, observers have remarked, that one attack is prophylactic against a second, as is the rule, I need scarcely remind you, with more or less, certainly with many, infectious and contagious diseases. Dr. Beddoes collected facts from practitioners in every part of the empire regarding the influenza which prevailed in February and March of 1803, and one of his general conclusions is, "that in all cases where the observation was made, persons affected by the influenza of 1788, (a widely-spread epidemic,) or who did not suffer at that time, were not affected by this epidemic." I have attempted to ascertain this point by personal inquiries, but I find people have such vague notions as to the influenza,—designating by that term an ordinary catarrh,—that little reliance can be placed upon any statement which does not refer the previous attack to a time when the true epidemic catarrh was prevalent. I had a severe attack of the epidemic of 1837, and so far I have rejoiced in a perfect immunity from this, but I do not think this is general. The manner in which it spreads in a family has been quoted as shewing its infectious character; first one taking it, and then others in succession, just as with measles and other infectious diseases, only more quickly, or, in other words, with more universality and subtlety of infection. Arguments on the other side have not been wanting, and these have been drawn partly from the general arsenal of anti-contagionists, and are as applicable to the plague, or cholera, or yellow fever; and are partly special, and not without weight.

Firstly, it is said that no other epidemic spreads with such marvellous velocity as this epidemic catarrh; but it may be replied that this may arise partly from the fact that it does not recur so often as the other epidemics, and therefore there are more persons in a given population capable of receiving the infection and generating it, and, therefore, of propagating it; and partly from the cir-

constance that the prophylaxis from other epidemics, as good food, residence in a well-drained and ventilated locality, sound health, &c., do not seem of avail against it: it requires, in short, no such predisposing causes to facilitate its progress as cholera, typhus, the plague, &c., demand. The circumstances that it affects the respiratory mucous membrane may also facilitate its spread, and account for its marvellous rapidity. The black death of 1348 was a pulmonary epidemic, and it spread through Europe with immense rapidity. Sauvages notices it thus:—"Peripneumonia pestilens ita Europam devastavit anno 1348, ut vix decima hominum pars superfuisset, si credamus Gallo et Schenkio; ex inter tres vel quatuor dies trucidabit. * * * Aderat tussis, summe respirandi difficultas ut agri sedere cogerentur, sputum cruentum." &c.

But it is urged that, if contagious, the mucus from the nose of an infected person should possess contagious properties, as in the disease termed glanders, and if so we ought to bless ourselves that the rubbing of noses forms no part of our social salutations. I think we may congratulate ourselves as to this point under the ordinary condition of the nose and its mucous membrane; but it would not be amiss to experiment with the fluids of patients suffering from influenza. As it appears that we cannot inoculate with success with other pulmonary infections, as rubella and pertussis, we should not, *a priori*, expect that influenza would differ from them; however, the experiment would be interesting, as I am not aware that it has been made.

With regard to the general arguments against the infectious or contagious nature of influenza, I need only say that they are too extensive to be now analysed. I would have you, however, learn something as to the danger of fallacious deductions on these points, by remembering that for nearly one thousand years, variola, rubella, and scarlatina, were considered by physicians to be one and the same disease, and having no connexion with specific contagion. Even Sydenham believed them to arise from a peculiar constitution of the atmosphere, just as some persons believe of the plague, cholera, and influenza.

If you ask me, then, which of the three hypotheses I decide for, I answer the third, and I therefore think that epidemic catarrh must be grouped nosologically with rubella, pertussis, and catarrhus æstivus, or hay-fever. I place it here, however, for this principal reason, namely, that you may better understand the treatment, which is altogether analogous to that of the febrile exanthemata. You may please yourselves in deciding whether it be an infectious or contagious disease or not, without any im-

portant result following your decision either way; for if it be infectious, you cannot, I apprehend, arrest its spread. Should you, however, take it out of the category of pulmonary exanthemata, (and I include pertussis amongst them,) and treat it as you would treat ordinary bronchitis or pneumonia, you will make a serious mistake, because such treatment will be hurtful to your patients.

The question naturally arises, whence comes this febrile poison, and what are the laws of its transmission and action, if it be analogous to that which excites the other pulmonary epidemics? The Germans call it the *Russian disease*, and this designation points, I think, to the *focus et origo mali*, just as the terms *Levant plague* and *Asiatic cholera* indicate the *locus in quo* of those epidemics. It would appear that certain localities are favourable at all times to the production of what may be termed indigenous febrile poisons, but that it is some coincidence of circumstances, some conjunction of mundane mutations, which makes them break their ordinary bounds and spread amongst the nations. We know little of the habits of the peasantry of the north; if we knew as much of them as we know of the Irish peasantry, we could perhaps determine the circumstances which give rise to the epidemic catarrh as readily as those which originate the Irish typhus. Various zones of climate have each their peculiar and indigenous epidemics, and the lungs in the Northern seem to occupy the position of the liver and intestines in the tropical, or the skin and intestines in the more temperate. I am inclined to think that a careful collection of facts would show the origin of the influenza to be in the North of Europe. It prevailed some weeks ago in Copenhagen; it was in the Scottish sea-ports before it was in York. If, however, you adopt the theory of infection, and consider the contagious or infectious element to be portable, you will expect to have the disease breaking out on all the great inland lines of communication with its native locality, and in such sea-ports as are in direct communication by sea. I should apprehend that it may be carried across the Atlantic, because certain facts show that the period of incubation, or the period during which the infectious matter will remain active, extends to some weeks. Consequently it will be carried from Great Britain to her Atlantic colonies, and to the United States, if it be not transported thither already from the North of Europe; and from the Atlantic it will pass into the South Pacific and the Cape. It will also traverse the ports of the Mediterranean and of Syria, Turkey, and Asia Minor, and take the overland route through Asia into India.

The laws of transmission and propagation of the infection of epidemic catarrh will be

analogous to those of other infectious epidemics; you will, therefore, do well to adopt the ascertained principles by which the transmission and propagation of the infecting element of measles, scarlatina, &c., are transmitted. After a whole population has been affected and obtained an immunity, still a few dropping cases will occur; and if persons come from a distant healthy spot to a locality where it has prevailed two or three months previously, those persons will probably be attacked. A ship's crew will sail from port, all apparently in health, and in a few days the epidemic will break out at sea. Parties will sedulously avoid (as they think) every source of infection, and yet it will reach them because they have not hermetically sealed themselves up for six months; they in the meanwhile earnestly asserting that it cannot be infectious because they have got it, and because they don't know how. All these circumstances occur with regard to the acknowledged infectious fevers, and will therefore happen with regard to this, if it belong to the same category.

Let us now estimate the symptoms with a view to the treatment,—these may be arranged into two classes; firstly, as belonging to the poison *per se*; secondly, as belonging to morbid conditions with which the disease is complicated.

The symptoms belonging to the action of the poison *per se*, are those which belong to it in common with the febrile epidemics. You have the first action of the poison exhibited in the ordinary pyrexial phenomena; and conjoined therewith a manifest depression of the powers of the nervous system with irritation of that system. You have ache of the muscles, rigors, weariness, rigors, anorexia, thirst, headache, asomnia, delirium, &c. But the poison, like its congeners, selects a certain portion of the nervous system as the special seat of its operation, namely, the respiratory, and you have the phenomena accordingly: *sternutatio* and *coryza*, from irritation of the branches of the fifth, pain in the *præcordia*, pharyngeal and bronchial soreness, spasm of the bronchi causing dyspnoea, violent cough, aching and cramps of the thoracic muscles, splitting pain in the forehead from irritation of the frontal sinuses, lachrymation, irritation of the conjunctive, and a discharge of thin mucus from all the irritated mucous surfaces.

The stethoscopic signs vary according to the intensity of the irritation, and according to the previous condition of the lungs. In ordinary cases, where the lungs are sound, you hear no râles whatever, for either the mucus is too thin to give out a sound, or there is too little of it, and this in cases in which the cough and dyspnoea are well-marked symptoms. This may sound strange, but I have carefully investigated this point,

and I find those who have used the *stethoscope* to say the same.

In some examples, the phenomena of the disease are more intense, and occasionally so very intense as to excite the suspicion of poisoning. You may have excessive prostration, suppression of urine, continued delirium or coma, violent dyspnoea, rapid pulse, great spasmodic action of the respiratory muscles, great turgidity of the face, aching and soreness of the facial muscles, discharges from the ears as well as from the eyes and nose, and even hæmorrhages and very profuse expectoration of thin mucus. Finally, you may have active inflammation of the lungs set up.

The symptoms dependent on pre-existing morbid conditions, are, first, those dependent upon cardiac and pulmonary disease. Wherever you have these, and they exist in the greater proportion of elderly persons, you have the thoracic phenomena more intense. Persons with valvular disease of the heart, dilatation or emphysema of the bronchi, thickening or chronic inflammation of the bronchial mucous membranes, chronic pleuritis, or tubercular deposit in any stage, will have more intense dyspnoea, violent cough, and the ordinary symptoms of congestion and inflammation. It is in this class of cases that a fatal termination is most to be dreaded, and in which it occurs. Secondly, the disease is complicated with the phenomena of concurrent epidemics. To this head we must refer those cases complicated with the *angina contagiosa*, prevalent in York. I have not yet met with an example of complication with scarlatina or typhus, but I think you may look out for such complications; to this head may be referred the diarrhoea occasionally developed. Thirdly, the disease is complicated with the thoracic inflammation common at this season of the year. It is this which will most deserve your attention, because the depressing action of the poison, and its peculiar determination to the pulmonary mucous membrane, render the treatment of these inflammatory diseases more difficult, while at the same time they are more urgent, and interfere more deeply with the respiratory functions. The sequelæ of the affection will be manifested in the nervous system, and especially in those organs supplied by the respiratory system of nerves. Chronic catarrh and ophthalmia, congestion and chronic inflammation of the tonsils, and glandular cryptæ of the pharynx and larynx, giving rise to troublesome coughs, chronic bronchitis, and a deposit of tubercular matter in the lungs, are the more prevalent affections which succeed an attack of the epidemic.

The treatment is sufficiently obvious from the preceding statements. In the milder forms of attack—and nine cases in ten are,

I think, mild—confinement to the house or to bed, simple diet, a gentle aperient, diluents, and any placebo in the shape of a saline, are all that you need prescribe. If you have cerebral irritation, five to ten grains of Dover's powder at bed-time, with a grain of calomel; if you have much dyspnoea, fomentations or opiate cataplasms to the thorax; if the cough be very violent, slight opiates; if symptoms of true thoracic inflammation show themselves, counter-irritants to the thorax, and small but frequently repeated doses of calomel, with the nitrate of potass and ipecacuanha, or, in very aged people, the hydrochlorate of ammonia. You will probably see some discussion in the journals as to the question whether the disease be inflammatory or not, and you may possibly find that some practitioners will recommend bleeding from the arm, or, at least, local depletion. The latter may be occasionally necessary, and in some rare cases the former; but you will discover that the danger of the disease is not by any means proportionate to the apparent intensity of the symptoms.

Doubtless, in most instances, your patients will recover if bled from the arm, but they would recover just as certainly and as quickly if let alone: the greatest skill will be displayed in preventing mischief.

The sequelae need not now be referred to, but I think you would do well to keep up a slight local stimulation in those patients who may show a tubercular diathesis, or have some chronic pulmonary affection; and nothing is better adapted to this purpose than the *Emplastrum Picis Compositum*. In the same class of patients metallic tonics and vegetable bitters are indicated.

Original Communications.

ON EPIDEMIC SCARLET FEVER IN THE METROPOLIS.

By R. ROWLAND, M.D.

THE scarlet fever, which for the last two or three months had prevailed epidemically in some parts of the metropolis, had presented certain anomalies which may be worth recording.

Upwards of forty cases of this complaint have been treated at the Bloomsbury Dispensary since the commencement of October. With a few exceptions, the primary disease was of the mildest kind; the efflorescence appearing on the skin in the usual manner, and the sore throat being slight and insignificant.

But this epidemic has been remarkable for the large proportion of patients in whom dropsy occurred, which attacked more than two-thirds of those received at the dispensary. This complication may rather be said to have accompanied than followed the scarlatina; for in many instances it began whilst the eruption was still apparent on the skin, and it was rarely delayed beyond the tenth day from the invasion of the fever. The effusion commonly shewed itself at first under the eyelids, or in the extremities. It frequently took the form of ascites; but in no instance was there effusion into the cavity of the chest, or within the cranium. The urine of these patients was loaded with albumen.

The fact, however, to which I would more particularly request attention is, that the dropsy was seen in several patients who had neither suffered from sore throat, nor from any indisposition which could by any means be construed into an attack of scarlet-fever. Great pains were taken to learn the previous history of these cases, but nothing could be obtained to make it even probable that the scarlatinal rash or sore-throat had preceded the dropsy. The greater number of these cases occurred at the same period of the epidemic, two or three children being sometimes presented on the same day with anasarca, although their mothers gave a positive denial as to the existence either of a prior eruption, or any irritation of the fauces.

Individual examples of this kind have been frequently noticed, and the explanation commonly assigned to them is, that the efflorescence must have appeared, but that it was so evanescent as to have passed without observation. This mode of reasoning, although perhaps allowable in solitary examples of the kind, can hardly be regarded as satisfactory when so many cases occur together as even to give a character to the epidemic. It seems much more probable that in these patients the scarlatinal poison fell with full force on the kidneys at once, not having manifested itself previously either on the skin or fauces; that in fact the cases alluded to belong to a variety of scarlet-fever in which the rash and sore-throat are both absent.

That this dropsy was the result of the poison of scarlatina, can hardly

admit of dispute. It appeared in a district where that disease was at the time epidemic, and in persons who had been directly exposed to its contagion; and it happened occasionally that one child of a family had the dropsy without the primary symptoms of scarlet fever, while the other children went through the complaint in its more common form. These circumstances are sufficient to establish identity of origin, and may be considered as illustrating the different modes in which this species of contagion acts on the system.

If these remarks are confirmed by the observations of other practitioners, they might help to throw some additional light on the pathology of dropsy from scarlatina, and they would completely invalidate the view that the effusion is secondary to a prior disturbance in the functions of the skin, whether in consequence of the rash or of subsequent desquamation of the cuticle.

Two cases have come under my notice lately which suggest the opinion that there is something in the present constitution of the atmosphere favourable to the generation of dropsy where any predisposition to it exists.

The first of these patients, a boy about ten years of age, came to the Dispensary with a purpurial eruption on the lower extremities. In a day or two afterwards, anasarca began to appear in the face and limbs, which rapidly increased, the urine being highly albuminous. Four years previously this boy had an attack of scarlatina, followed by dropsy, since which his health had been tolerably good. The dropsy has now again disappeared, but the urine remains albuminous, and the patient is anæmic, and suffers from indigestion.

There can be little doubt that in this instance the dropsy is connected with diseased kidney, dating from the attack of scarlet fever four years ago; but it is curious that the effusion should reappear at this time, when scarlatinal dropsy prevails so generally.

The other case referred to is very similar in most respects. It occurred in Charing Cross Hospital, where my attention was directed to it by the kindness of Dr. C. Golding. This patient had scarlet fever three years ago, and soon after he became dropsical. The

swelling subsided shortly, and from that time until within the last few weeks his health remained good. Recently he was brought to the hospital, suffering from general dropsy, accompanied by albuminous urine. In a little while the effusion subsided, and he was apparently doing well, when the dropsy reappeared rather suddenly. Then the symptoms of pericarditis and double pleurisy supervened, under which he soon sank. In the post-mortem examination the evidences of these affections were strongly marked, and, moreover, the kidneys were both found in an advanced stage of granular degeneration.

9, Woburn Place,
Nov. 23, 1847.

ON PHOSPHATIC DEPOSITS IN THE URINE OF CHILDREN.

By JOHN GRANTHAM,
Fellow of the Royal College of Surgeons.

THE following statements in reference to phosphatic disease occurring in children as an idiopathic affection, are written with the view of again directing the minds of the profession to the important fact of the elimination of the mixed phosphates by the kidneys as a cause of impaired health, and one fraught with all the consequences which attend the continued loss of any one or more of the elementary principles of life, and further, to show the absolute necessity for medical men to pay more attention to the inductive process (for such I term the analysis of the urine) in the investigation of disease, more especially in all those affections where the external symptoms do not form a complete clue to the exact deranged function or functions. "True knowledge," says Bacon, "is the knowledge of causes," and as in morals, no less in physical science, can we hope to discover the relation of cause and effect only by following the *inductive process*. If our judgment be correct, it must not only comport with, but satisfactorily account for, all the facts, however numerous, to the exclusion of every other reasonable hypothesis. This year I have attended three patients in one family, (children) whose parents had previously lost three other children, two from serous effusion in the ventricles of the brain,

and one from atrophy. The father is a man of full stature, of fair sandy complexion, temperate, and of very active habits, with a well-developed brain. The mother is a person of a dark complexion, melancholic temperament, and very desponding at times, and not highly organized as regards the cerebral powers. The result of such a combination of mind in persons in affluent circumstances, necessarily endangers the regular and discreet management of their offspring in diet, &c. The general appearance of the children presented a lax condition of the muscular system: a fair complexion, inclined to a sandy colour; the skin pallid; the diffusion of animal heat irregular, particularly the feet and region of the spinal column; the eyes dull; the tongue clean, but presenting a watery appearance; the gums paler than natural; inability to undergo either much mental or bodily exercise; the appetite good; the alimentary functions regular, but with a constipated tendency. The patients complained of wearied painful sensations, which were not constant, referable to those parts only which are in the direction of the nerves from the lumbar plexus. On examination of the urine, I found it (in the two younger children, females, one aged 5 years, the other 7 years old,) of a pale straw colour, semi-transparent, spec. grav. 1.020, normally acid, quantity increased, no deposit after standing, but further analysis shewed evident traces of an undue proportion of the mixed phosphates in the *urina sanguinis*, but not in the *urina potus*. The examination of the urine of the eldest child, a male about 11 years of age, presented similar results, the difference being just reversed, the mixed phosphates being only found in the *urina potus*. He showed less proofs of general debility than his sisters; like them there was at times the peculiar pallor of the skin which invariably attends phosphatic diseases.

The treatment consisted in first directing the regulation of the temperature of the body, by ordering the patients to wear flannel next the skin, and the use of the tepid-bath at bedtime; to abstain from sugar, fruits, the potatoe, (which latter vegetable is almost useless in such a condition of the stomach,) and all fermented

liquors. For breakfast, bread and milk; for dinner, an equal admixture of animal and vegetable food, with plenty of salt; milk and bread for tea or supper. The nitro-muriatic acid was given before breakfast and dinner, until the undue quantity of the phosphates ceased passing off; after which the mild forms of iron, such as the *vinum ferri* and acetate of iron, two or three times a day, were persisted in until the pallor of the skin was lost. All aperients in these affections must be regarded as evils, yet they may be required, and the most simple will be found the least injurious; exercise in the open air as much as possible without fatigue.

There is one more observation I would add to the above statement, which is, the necessity for repeated investigation into the health of these patients when they are considered *convalescent*: although the phosphatic diathesis may be removed, and the countenance assume a healthy appearance, yet such patients will at times, from various causes, pass heavy urine, which is generally loaded with the lithates, and sometimes the oxalates will also be found in the secretion. These effects, if unobserved, would very soon bring back a bad train of symptoms, therefore suggestive of the danger of pursuing an unvaried plan of treatment.

Crayford, Kent, Nov. 23d, 1847.

MEETINGS OF MEDICAL SOCIETIES APPOINTED FOR THE ENSUING WEEK.

Westminster	Sat. Dec. 18, 8 P.M.
Medical	Mon. " 20, "
Pathological	" " " "
Chemical	" " " "
South London	Thur. " 23, "

HOMŒOPATHY AT THE COURT OF SPAIN.

THE foreign medical journals inform us that all the physicians of the Court of Queen Isabella have resigned their offices. The cause of this unanimous act is the presence at the Court of a certain homœopathic physician, Dr. Nunez, the friend and protégé of General Serrano. Like our contemporary *L'Union Médicale*, we join in approving this specimen of Iberian medical ethics.

* Dr. Prent, in his work on Renal Diseases, page 261, says these cases are uncommon.

MEDICAL GAZETTE.

FRIDAY, DEC. 17, 1847.

Most of our readers will probably have seen, with some surprise, the charge recently made by Mr. Synnot* against Mr. Mills, the Deputy Coroner of West Middlesex; and they who are in the habit of attending coroners' inquests, are doubtless desirous of knowing the result of the action SYNNOT *v.* MILLS. The case is of such importance to the profession, that before offering any remarks on the subject, we feel it necessary to restate some of its leading features. Mr. Synnot, a medical practitioner, residing in Cadogan Place, was called to a child that had been taken suddenly ill. The child died in a few hours: for his own satisfaction, and, as we infer, with the consent of the parents, he proceeded the next day to ascertain the cause of death by making a post-mortem examination. The parochial constable was then in the house, and desired the surgeon not to touch the body, because *he intended* to apply to the coroner to hold an inquest. As the constable had no legal authority to interfere, and the surgeon had no reason to suspect, from what he saw of the child before death, that it had died from unfair means, he made the inspection, and ascertained that there were three pieces of the kernel of a nut in the bronchial tubes. This discovery at once accounted for the dyspnoea under which the child laboured, and its subsequent death.

An inquest was held, and a warrant (summons) was served upon Mr. Synnot, requiring him to attend to give evidence before the jury then sitting. The evidence thus given was, we are

informed, strictly *medical*. After the inquest, the witness applied for his fee, but it was refused by the Deputy-coroner: first, for the post-mortem examination, because it was made without the coroner's order; and secondly, for the attendance and *medical evidence*, because the summons served upon Mr. Synnot was a summons for an *ordinary witness*, and not drawn up according to schedule A in the Medical Witnesses' Act, 6 and 7, William IV. cap. lxxxix.

Mr. Synnot, conceiving himself to be unjustly treated, brought an action against Mr. Mills in the Bloomsbury County Court. The case was heard on the 1st inst., and the judge decided that Mr. Synnot was clearly entitled to his fee, but by a technical mistake, he could not recover it under the form of action instituted. Our readers will find the details elsewhere;† Mr. Mills, however, took the judge's advice and paid the fee, but the plaintiff did not recover his costs. As the fee was thus proved in the judgment of an unbiased person to have been wrongly withheld, the costs and expenses should have been undoubtedly paid to Mr. Synnot.

To practitioners who are liable to be summoned by coroners, this case is of more importance than may at first sight appear; and the profession is much indebted to Mr. Synnot for the spirit of independence which he has manifested throughout the whole of this affair. The first question which suggests itself is, whether a "parochial constable" possesses any legal authority to prevent a medical man from making a post-mortem examination of the body of a patient. The answer is, assuredly not:—if the coroner has already intimated his intention of holding an inquest, then a medical man ought to wait for the necessary order before he undertakes it. Further, if the practitioner himself has strong reason to suspect

* See the MEDICAL GAZETTE of Dec. 3d, p. 994.

† Page 1081.

death from the violence of others, by the symptoms preceding death or by the external appearances of the body, he is not justified in making the inspection until the coroner has been informed of the circumstances. So far as it appears from the facts of this case, the interference of the constable was a most impertinent intrusion, and treated accordingly.

That the holding of important judicial inquiries should be left in the first instance to the judgment of "parochial constables" is one of the most absurd parts of the present system of conducting coroners' inquests. We know not whether the constable has a fee *per case* in this district, but some coroners are in the habit of feeing these low and ignorant officials for information which may lead to an inquest. The gross impropriety of such a practice must be obvious: it lays the poor open to acts of petty tyranny, to extortions in order to avoid inquests, and, unless these "Dogberries" be men of immaculate virtue, it may favour the concealment of crime, by information being withheld for a higher fee than that which would follow from its being communicated. Apart from this digression, a constable or beadle has, we apprehend, no power by law to prevent a medical man making a post-mortem examination of the body of a patient.

The second feature in the case is the "summons." Mr. Synnot, unfortunately, did not examine with attention that which was served upon him; and probably not being deeply versed in "Crown's quest law," he did not suspect that a *medical* man could be summoned to attend an inquest under more than *one* legal form. We must admit that since the enactment of the Medical Witnesses' Act, it is the first time we have heard of a medical practitioner being summoned in a *non-medical* capacity to give *medical* evidence of the cause

of death; and we here stop to inquire, if this principle holds good in a case like that of *Synnot v. Mills*, of what use is the Medical Witnesses' Act to the profession? We had always thought that the object of the Act was to ensure a very moderate but *certain* payment to medical practitioners for their attendance, upon the order of a coroner, to give evidence at inquests. The first words of the preamble are:

"Whereas it is expedient to provide for the attendance of medical witnesses at coroners' inquests, also remuneration for such attendance, and for the performance of post-mortem examinations at such inquests: be it therefore enacted, &c."

No one could have been deceived if the words had been—

"Whereas it is expedient to provide for the attendance of medical witnesses at coroners' inquests, and to obtain medical evidence from them without the payment of the fee authorised by this Act, it shall be lawful for the coroner, at his pleasure, and without notice to the medical practitioner, to issue his order as for an *ordinary* witness, and the medical practitioner shall be thereupon compelled to attend and give *medical* evidence under a penalty of five pounds, to be enforced by the distress and sale of the offender's goods, &c."

We are quite sure that our readers will agree with us in opinion that a more shameful or unjust perversion of an Act of Parliament could not possibly have been attempted. A gentleman acting as coroner deliberately sends out a summons which he knows will not carry a fee; and procures by means of this sham summons, evidence for which, under a special Act of Parliament, he is bound to pay! The Deputy-coroner's defence before the judge of the County Court, so far as we can understand it, is this:—The 6th and 7th William IV. chap. 89, gives, in Schedule A, a form of summons: and as this particular form of summons was

not sent to the medical practitioner he cannot legally claim a fee.

This view is certainly justified by the words in the preamble; but there is, at the same time, a rule of law which *does not allow a man to take advantage of his own wrong*: and if the plaintiff made a claim for a fee under circumstances *not legal*, it was entirely the fault of the Deputy-coroner himself, in not issuing, in due legal form, the summons required by the Medical Witnesses' Act. Any other view of this question renders the Act, for the passing of which the profession is chiefly indebted to the exertions of Mr. Wakley, "a mockery, a delusion, and a snare." If Mr. Mills be right in his interpretation of it, every coroner in the kingdom may daily practise the trick of procuring medical evidence without paying for it! There is not one practitioner in ten thousand who knows the difference between an "ordinary" and a "medical" summons; and to take advantage of their ignorance on this subject by such a scandalous evasion, is what we are persuaded no Court of law would ever permit. Had this case gone before the Queen's Bench on a mandamus, we have not the least doubt that the defendant would have heard a decision strongly condemnatory of this mode of attempting to defeat the provisions of a useful Act of Parliament.

The refusal of the fee for the post-mortem examination was strictly legal; but was it equitable? The inspection of the body was made *bonâ fide*: it revealed a cause of death which could not have been known without it: the evidence obtained from it served the purpose of the jury; for without it no true verdict could have been found. We therefore search the case in vain for a sufficient motive to justify the non-payment of one guinea for the medical services thus rendered.

The only apparent ground for throwing the Medical Witnesses' Act in the teeth of Mr. Synnot, and refusing the fee for the examination of the body, is to be found in the disputed jurisdiction of the parochial constable! Had the plaintiff given way to the constable, he would, in our judgment, have sacrificed his independence in the matter, but he would probably have obtained his one or two guineas with less trouble. He has, however, we think, good reason to complain of the deputy-coroner taking up and putting down the Medical Witnesses' Act just as he pleases. When the witness is to be *summoned* to give *medical* evidence, Mr. Mills sets its provisions at defiance; but when a demand is made by the witness for *fees*, then the Coroner falls back upon its provisions, and goes the length of contesting in a County Court, a question upon which there cannot be in common equity two opinions.

Our readers will observe that the judge of the County Court held that the form of summons received by a medical man to attend an inquest was of no consequence: a mere *verbal* message would bind a coroner to the payment of a fee. His Honour may be right in putting this reasonable and equitable interpretation upon the statute, but his decision may hereafter be held wrong in point of law. We therefore give our advice to practitioners as a safe rule not to attend an inquest to give *medical* evidence upon a *verbal* message, nor upon any summons except that which is specified in the 6 and 7 Will. 4. We here reprint it:—

Form of Summons for a Medical Practitioner.

Coroner's Inquest at upon
the body of .

By virtue of this my order as coroner
for you are required to appear
before me and the jury at on
the day of one thousand

eight hundred and , at of the clock, to give evidence touching the cause of death of [and then add, when the witness is required to make or assist at a post-mortem examination, and make or assist in making a post-mortem examination of the body, with [or without] an analysis, [as the case may be], and report thereon at the said inquest.

(Signed) C. D., Coroner.

To Surgeon [or M.D., as the case may be.]

The "ordinary" summons, or that which refers to a non-medical witness, as given by Jervis, runs as follows:—

(Ordinary) Summons for a Witness.

— to wit. Whereas I am credibly informed that you can give evidence on behalf of our Sovereign (lady the Queen) touching the death of R. F., now lying dead in the parish of in the said county of ; these are, therefore, by virtue of my office, in her Majesty's name to charge and command you personally to be and appear before me at the dwelling-house of known by the sign of the in the said parish of at six of the clock in the evening on the day of instant, then and there to give evidence and be examined on her Majesty's behalf before me and my inquest touching the premises. Hereof fail not, as you will answer the contrary at your peril. Given under my hand and seal this day of one thousand eight hundred and

C. D., Coroner, L. S.*

To A. B., C. D., &c.

We are rather desirous of knowing under what precise circumstances a coroner is justified in issuing an "ordinary" summons to a *medical man*. A practitioner may, we admit, be a witness of some fact connected with the circumstances which led to the death of the deceased, and upon this he may be required to give evidence; but the coroner has no power to examine him touching the *cause of death*, or to put to him any question the answer to which requires *medical knowledge and experience*. A

* Jervis on the Office and Duties of Coroners, 204.

witness may fairly decline to answer until he has duly received a medical summons according to the form above given. Any other view of the subject would imply that the Medical Witnesses' Act was not merely a dead letter in its legal provisions, but that it imposed upon the profession, by pretending to award fees for medical evidence, when the evidence could be obtained and the payment of the fees evaded by substituting one summons for another.

THERE is this week a complete dearth of recent intelligence respecting Asiatic cholera in the foreign journals. The Augaburg Gazette of the 4th Dec., copying its account from the Gazette of Riga, gives a summary of the progress of the disease in some of the eastern provinces of the Russian Empire. The greater part of this report has already appeared in our pages. The disease has ceased in the Government of Saratov, after attacking 18,954 persons, of whom 9,194 (nearly 50 per cent.) died! Letters from Posen of the 1st December announce that the cholera had made its appearance at Warsaw and at Slupsce, a frontier village, about fifteen leagues from Posen.

We find in these journals no account of the progress of the malady in Saint Petersburg or in the Baltic provinces and from this we draw a favourable augury. A rigorous quarantine is maintained in the Swedish and Norwegian parts. The Mediterranean ports of Sardinia, Malta, and Naples, have also established a strict quarantine with respect to vessels arriving from the Levant, or other suspected places. Intelligence from Malta of the 4th inst. announces that the French steamer *Pericles* quitted Malta on the 3d inst., without being allowed to communicate with the island. The reason assigned for the exclusion is,

that a fatal case of Asiatic cholera occurred on board of this vessel, during her passage from Smyrna.

It is reported that the Count St. Ferreol, a nobleman attached to the French Embassy in Constantinople, has recently died in that city from an attack of cholera.

We have been able to procure no intelligence of the "several unmistakeable cases of Asiatic cholera" described in the *Times* of the 8th inst. as having occurred in this metropolis during the preceding week, and we are inclined to think that they existed only in the imagination of the reporter. A case which might perhaps be called, with equal propriety "unmistakeable," was recently reported in this journal as having occurred at Dublin in September last.*

Reviews.

On Indigestion: its Pathology, and Treatment by the Local Application of uniform and continuous Heat and Moisture. With an Account of an Improved Mode of Applying Heat or Cold in Irritative and Inflammatory Diseases. By JAMES ARNOTT, M.D. Physician to the Brighton Dispensary. 8vo. pp. 107. Churchill: London. 1847.

Dr. JAMES ARNOTT's ingenious inventions of several apparatuses admitting of being extensively used in medical and surgical practice, are well known to the profession. The present treatise appears to have been written almost expressly for the purpose of recommending the employment of one of these contrivances in the treatment of dyspepsia, and of certain other forms of internal disease.

The first section of Dr. J. Arnett's work is devoted to remarks on the "Local Application of Heat and Cold," and goes far to prove a fact which must have frequently suggested itself to

nearly all practical men, that the true value of these therapeutic agents has never been fully ascertained, owing to the great difficulty of maintaining a fixed and absolutely regulated temperature in the applications employed.

A quotation of Dr. Arnett's theory of the nature of indigestion will fairly introduce his account of the principal means which he is accustomed to employ in the treatment of a large proportion of cases of dyspepsia.

"The proximate cause of indigestion is not a single affection, but a chain of morbid elements. The change in the quantity or quality of the gastric juice, or solvent liquid of the stomach, is probably the circumstance in dyspepsia on which the disorder of the function of digestion principally depends: but it is not the circumstance of most importance in regard to the treatment of disease. The treatment must be directed against the cause of this change in the secretion, which, doubtless, in the great majority of cases, if not in every case that has continued for some time, is what may be termed an inflammatory, or rather a phlegmonoid irritation of the mucous coat of the stomach. This irritation, again, though it may often be the original affection, may often arise from muscular or nervous weakness; and it frequently increases into a state of low inflammation. If the phlegmonoid irritation has not been preceded by debility, it may cause, co exist with, or be followed by debility. The change in the gastric juice may arise from debility alone, or other causes yet unknown; but that it does so frequently, or that debility and such a change in the secretions should continue long without superinducing irritation, is very improbable."

Acting upon the opinion, therefore, that dyspepsia usually depends upon a certain amount of gastric inflammation and irritation, the author states that,

"Impressed with a sense of the importance of the discovery of some means by which the duration of dyspepsia might be shortened, and greater assistance afforded to nature in her curative operations than can be given by regimen and the few medicinal substances that are really useful, I very soon, after ascertaining its value in analogous affections, made trial of the effectual application of heat and moisture, as described in the preceding section*, and the result of a

* Dr. J. Arnett's account of his "current apparatus" is as follows:—"A current of water of the appropriate temperature is made to flow

* MEDICAL GAZETTE, NOV. 19, page 888.

very extensive use of this remedy in dyspepsia is, that I can recommend it as being by far the most beneficial and most generally applicable measure that has hitherto been employed in its treatment. While it is powerful in operation, it is perfectly safe; and its use is compatible with whatever other means may be indicated by the presence of particular symptoms. The great or characteristic quality of this local application is, that it represses the vascular excitement, which constitutes the principal morbid element, without increasing the debility, local or general, which likewise forms an important part of the disease. In this respect it has a decided advantage, in the vast majority of cases, over the application of leeches, or other modes of abstracting blood; and, being a remedy which soothes instead of irritating, and yet operates in great part by revulsion, it, has an equal superiority over counter-irritation as it is usually produced."

"On commencing the use of the current-apparatus in dyspepsia, I limited its employment to the more acute cases, or those in which excited or inflammatory action was made manifest by the symptoms; but, suspecting that very few cases of dyspepsia exist without vascular excitement to a certain degree, I extended its use to most cases that occurred, under the idea, which experience has shewn to be correct, that if it failed in being advantageous, it was not likely to have an opposite effect. The result has proved (as far as the operation of a remedy can prove) that the opinion of the almost constant presence of vascular excitement in dyspepsia was correct; for in very few cases has this means of applying heat and moisture been employed without more or less benefit.

"The following are the general rules which my experience in the use of this remedy would authorise me to recommend as those by which its application should usually be governed.

"The degree of heat must be regulated by the time of its continuance, and the extent of surface to which it is applied. It must be in an inverse proportion to these, and should not be greater than what yields an agreeable soothing sensation to the patient. When the application has been continued for two or three hours, night and morning,

through a thin waterproof cushion or bladder in close contact with the body. The water runs into the cushion from a fountain reservoir raised above it, through a long flexible tube; and again escaping from the cushion, it passes through another tube into the waste vessel. The cushion is of a size and form suitable to the part of the body on which the water is to act; and, by a particular contrivance, any pressure from its weight is prevented. The part in contact with the cushion is kept moist either by previously wetting the cushion, or by interposing a piece of wet lint, flannel, or other bibulous substance."

over a moderate extent of surface, a temperature varying between 105° and 110° has been that usually employed. Patients, however, differ considerably in their sensations in respect to heat, and in their tolerance of their continuance; and it must be accommodated to these differences. Some find even 105° too high if long continued; and others have declared that 115° has communicated the most agreeable warmth. So high a degree as the last would be improper as a continued application in dyspepsia, because the whole system would quickly become heated, and, probably, with an unfavourable tendency as respects the disease. To obviate this general effect on the system, it is advisable to cover the other parts of the body lightly while the cushion is being applied, in order that any excess of heat may easily pass off.

"The extent of surface to which heat and moisture have usually been applied is covered by a water-cushion three quarters of a foot broad, and three times the length. The cushion, after having had its inner surface made thoroughly wet, is placed over the left side, and is kept close to it by a bent piece of covered sheet-lead. Various circumstances, however, will render it proper that the size of the cushion should be altered. When the irritation has spread to the contiguous chylipoietic organs, it may be required of a larger size; but when there is much tendency to general heating of the system and perspiration, the cushion described ought to be made smaller by folding.

"During the day, after the application, the patient has usually worn a broad flannel band, surrounding and supporting the body, for the purpose of keeping up in some measure the action produced by the cushion, and as a defence against the influence of cold.

"The application ought to be continued day after day until the symptoms have subsided; and it should be resumed on any relapse. Relief is generally speedily afforded by it; and, after a few days' application, a general amelioration of symptoms may, in cases of ordinary occurrence, be confidently expected.

"The time during which these daily applications ought to continue will vary, of course, according to the severity of the disease and other circumstances. When dyspepsia has been of such duration and severity as to have caused organic change in the textures of the stomach, no speedy effect can be expected from this, nor, in fact, from any other measure; but it is consolatory to know that it often continues long, and in an aggravated form, without any such change."

Dr. Arnett also gives various other instructions with regard to the employ-

ment of this and other remedial measures in dyspepsia; but for these we must refer our readers to the work itself. Without by any means fully coinciding with Dr. Arnott in his opinions relative to the pathology of the variety of morbid affections grouped under the general title of "indigestion," or agreeing with him in many of the theories which he has incidentally thrown out in the course of this treatise, we cannot but admit that the apparatus which he has invented appears likely to prove of great value, not only in many cases of dyspepsia, but also in various other forms of internal and external disease. We recommend this little treatise to the profession, as containing, among other suggestions of somewhat doubtful value, many useful practical hints.

The Cyclopædia of Anatomy and Physiology. Edited by ROBERT B. TODD, M.D. F.R.S. &c. Part XXIX. Sherwood and Co. London: November 1847.

WE have much pleasure in congratulating the editor of the Cyclopædia of Anatomy and Physiology upon the somewhat unfrequent, but always welcome, event of the appearance of a new fasciculus of his invaluable work. Apart from the impatience which is naturally felt by the subscribers to a serial of this description, at finding that, after the lapse of very many years, their book of reference still remains, like the tower of Babel or the Cathedral of Cologne, in a state of stupendous incompleteness, there exists a great objection to a prolonged delay in the appearance of the parts of a work of reference, owing to the various changes which take place in the views entertained regarding the sciences of which it treats during the period which intervenes between the publication of its earlier and its later numbers. At the time when the first part of the Cyclopædia of Anatomy and Physiology was given to the profession, hardly any facts with regard to the structure and development of tissues were fully established. The present improved system of microscopical examination was scarcely introduced into this country, and the science of organic chemistry, although it had already engaged the attention of many distinguished ob-

servers, was still in its infancy. Thus the commencement and the termination of this work will always bear the character of having been written during two distinct epochs of anatomical and physiological science, and the strongest contrasts will be observed between the earlier and the later articles, as anatomists of the present day cannot, of course, adapt their views in such a manner as to prevent them from clashing with those which were generally received some ten or twelve years since. Still, the system of which we complain has its advantages in the present instance. Had the Cyclopædia been concluded within four or five years of its commencement, it would, long ere this, have been in the condition of an almost exploded work, the errors and deficiencies of which could scarcely have been corrected and supplied in a new edition of three times its size. It should, therefore, in some measure tranquillize the impatience of irritable subscribers to observe that the labour of producing the work has increased enormously with the rapid increase of the science, and that the longer the appearance of the articles is delayed the more replete will they be with newly elicited and important facts.

The present number, although containing only three articles, forms a most important addition to the preceding fasciculi. Its principal feature is the conclusion of Dr. Todd's admirable summary of our present knowledge with regard to the physiology of the nervous system. We shall confine our attention in the present review entirely to this article, postponing our notice of Mr. R. Jones's interesting paper on the Polygastrica until the appearance of its conclusion in the next number. We have read Dr. Todd's elaborate but highly lucid details with the greatest interest. The subjects of which he treats in this portion of the article are so numerous, and require so many details for their elucidation, that we cannot do more than glance at the principal topics, and extract a few of the most interesting passages. The leading points discussed in this part of the "work" (for it might well be considered as a separate and complete treatise) are the functions of the sensitive and motor nerves, and the physiology of the spinal chord, encephalon,

and ganglionic nerves. We think that the short article on "the function of the ganglions" has scarcely been done full justice to; the observations, or, at least, the arguments of several recent investigators of this subject, might well have afforded materials for a few additional pages; the other questions are, however, very copiously discussed, and we think that by the careful analysis and correlation of the views of others, as well as by his own ingenious observations, the author has succeeded in throwing considerable additional light upon several features of these difficult and obscure subjects. We have marked the following passages for extract, as containing, within a small space, some of the most important conclusions which the author has arrived at. The following, whether founded upon correct physiological and pathological data or not, may afford a useful practical hint:—

"It is a highly interesting physiological fact, which has an important practical bearing, that at whatever part of their course sentient nerve-fibres be irritated, the same sensation will be produced, whether the seat of the irritation be the centre, the periphery, or the middle of their course, provided only the same fibres are irritated in the same degree. Thus it frequently happens that sensations are referred to the extremities of a nerve when the existing irritation is situated at its point of implantation in the centre. The sensation of tingling or formication in the hand or foot, arm or leg, is frequently an indication of cerebral or spinal disease; but the practitioner should not forget that precisely the same sensation may be caused by an irritation taking place in the course of the nerve. I have frequent occasion to estimate the importance of this fact in the treatment of cases of sciatica. This disease generally consists in an irritated state of the nerve in some part of its course by a gouty matter, and it may be treated with the best effects by blisters applied over the nerve. As, however, the morbid impregnation may have taken place at any part of the course of the nerve, it is a very useful practice, when a single application fails, to apply the blisters over different parts in succession, instead of confining the vesication to one region."

We wish that our space would admit of an analysis of Dr. Todd's admirable investigation of the question "Is the nervous force electricity?" But we must be content with quoting his conclusions respecting the muscular and nervous forces.

"1. That both are polar forces, and in close analogy with light, heat, electricity, magnetism.

"2. That either may be excited by, or transformed into the other,—the nervous may excite the muscular, or the muscular the nervous. It seems not improbable that it is by this reaction of the muscular upon the nervous force that the muscular sense is developed, and, as Matteucci has ingeniously suggested, many movements independent of the will, yet following others which may be voluntary or otherwise, may result from the same causes.

"3. That the same analogy which exists between electricity and magnetism is found between these organic polar forces; the muscular being more nearly allied to the former, the nervous to the latter.

"4. Both these forces are dependent on the healthy nutrition of their respective tissues, muscle and nerve; and the slightest disturbance in that process in either tissue will readily affect the intensity of the force.

"5. Nevertheless, there is a certain mutual dependence between these two tissues and their forces; for the exercise of each is, within certain limits, impossible without the other; and, as this exercise is necessary to maintain healthy nutrition, so these forces are to a certain extent dependent on each other for their normal development. The practitioner in medicine will duly appreciate the great importance of this conclusion."

The article on the spinal cord contains a very ample sketch of the views propounded by Whytt and Prochaska with regard to the class of actions which we now call reflex or physical; and we agree with the author in his opinion that a very far more precise knowledge of these actions was possessed and evidenced by the physiologists in question than subsequent writers have been willing to allow.

Etherisation being considered, at the present time, as a kind of "universal solvent" of all the difficult points in medicine and the collateral sciences, the following observations with regard to the effects of this agent upon the spinal cord will be thought interesting:—

"I have ascertained, by several experiments, that the inhalation of ether has considerable effect in controlling the natural polar state of the cord, as well as that which may be produced by strychnine. A pigeon deprived of its cerebral hemispheres lives in a state of sleep for a considerable time; it flies when thrown in the air, spreading and flapping its wings: stands when

placed on its feet. A bird thus mutilated was made to inhale ether; it could not stand, and when thrown into the air it fell to the ground like a heavy bag, its wings remaining applied to the sides of its body, or if the wings were drawn out as it was thrown into the air they quickly collapsed. As soon as the effects of the ether had passed of it stood and flew as before. I gave strychnine to a rabbit, a guinea-pig, and a dog, so as to excite the tetanoid state. Immediately the spasms showed themselves, I brought the animal under the influence of ether; the spasms ceased immediately, and the animal became perfectly relaxed; but, as soon as the effects of the ether passed off, the spasms came on again, but were soon subdued by a fresh inhalation of ether. And thus I found that the life of an animal poisoned by strychnine could be greatly prolonged through successive inhalations of ether; for animals of the same kind, poisoned by equal doses of strychnine, but not subjected to the influence of ether, perished very rapidly."

The article on the functions of the encephalon is replete with close reasoning and ingenious argument. The author's examination of this subject has led to the following conclusions:—

"1. That the encephalon consists of a series of centres, each of which has its proper influence in the exercise of the mental and bodily functions. These are the centre of intellectual actions, the centre of volition, the centre of sensation, the centre of the co-ordination of muscular movements, the centre of respiration and deglutition.

"2. That the cerebral convolutions, with the fibres which connect them to the corpora striata and optic thalami, constitute the centre of intellectual action.

"3. That the centre of volition consists primarily in the corpora striata; the inferior layers of the crura cerebri, which are continuous with the anterior pyramids, connect these gangliform bodies with the vascular matter of the crura (locus niger), with the vesicular matter of the mesocephale, medulla oblongata, and with that of the spinal cord (the anterior horns), all of which, with the corpora striata, probably form the dynamic nervous matter in the impulses of volition for nerves implanted in them respectively.

"4. The optic thalami, which by the extension of the olivary columns through the mesocephale and medulla oblongata to the posterior horns of the vesicular matter of the spinal cord, become continuous with those parts, constitute the centre of sensation, having implanted in it or connected with it less directly all the sentient nerves of the body.

"The nerves of the higher senses probably have each special ganglia or centres; which, however, are connected with the general centre; as the olfactory lobes for smell; the retina, corpora geniculata, or corpora quadrigemina for vision; the vesicular matter in which the auditory nerves are implanted, or the flocks of Reil, for hearing; the ganglia of the fifth glosso-pharyngeal, and the posterior roots of spinal nerves for taste and touch.

"5. The cerebellum constitutes the centre of the co-ordination of muscular movements, both in locomotion and in all the complicated movements of the frame.

"6. The upper and posterior part of the mesocephale, including probably the greatest portion of the corpora quadrigemina, constitutes a special centre of actions referable to the emotions, among which may be reckoned sexual impulses. This centre connects itself with the medulla oblongata by the olivary columns, and, through the same channel, with the posterior horns of the spinal vesicular matter.

"7. The medulla oblongata constitutes the centre of respiration and deglutition, but it cannot be considered as wholly devoted to these functions, inasmuch as it consists likewise of continuations of the centres of volition, of sensation, and of emotion."

We trust that the editor will not fail to exert a certain amount of excitatory energy in urging his contributors to greater activity in the preparation of their memoirs, but we must also hint that, so long as the delay in the publication of the numbers is not hopelessly protracted, the subscribers will take into consideration the time which it would have occupied themselves to prepare any of the more important articles with which the Cyclopædia of Anatomy and Physiology is enriched.

Lallemand on Spermatorrhœa.

IN the review of Mr. M'Dougall's translation of Lallemand on Spermatorrhœa, contained in our last week's number, it is stated at page 1030 that with the exception of Mr. B. Phillips' papers, published in the MEDICAL GAZETTE, "we look in vain among surgical writings for any practical remarks on the subject." The reviewer has here inadvertently omitted to notice Mr. T. B. Curriep's excellent work on Diseases of the Testis. As an act of justice to that gentleman, it is only fair to state that his work contains a chapter embracing the results of con-

siderable experience on this subject, and that it is well deserving the attention of those who seek good practical information on the treatment of this disease.

Proceedings of Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

Tuesday, Nov. 22, 1847.

J. M. ARNOTT, Esq. F.R.S. PRESIDENT.

Case of Extensive Laceration of the Liver, with Rupture of the Gall-Bladder, and other Lesions caused by External Violence; with Remarks. By WALTER FERGUS, M.D., House-Surgeon to the Staffordshire General Infirmary. [Communicated by Dr. Todd.]

W. F., aged seventeen, was brought to the Staffordshire General Infirmary on March 28, 1846, the wheel of a water-cart having passed over his abdomen four hours previously. The amount of shock sustained was trifling; he seemed to suffer very little, and there were no marks of external violence. The abdomen was only slightly tender on pressure; pulse 80. When seen early on the following morning, there were great pain and tenderness over the belly, and the pulse had become small and rapid. He was bled to fourteen ounces, and some calomel, with opium, was ordered to be taken at short intervals. He then vomited some bilious matter, and expressed himself as relieved. A turpentine enema administered shortly afterwards procured a free and healthy evacuation of the bowels. On the 30th, leeches were applied to the abdomen, after which the tenderness subsided, and the patient became in every respect convalescent, so that he got up and thought of returning home. On April 3rd he was suddenly seized with extreme pain and tenderness over the whole belly, and all the symptoms of acute peritonitis rapidly supervened. On the 4th the abdomen became tumid from the presence, evidently, of fluid; and he died, without any remission of the symptoms, fifty hours after the acute attack commenced, and on the ninth day after the receipt of the injury. On examination of the body, a large quantity of bilious-looking fluid was found in the peritoneal cavity, in which were suspended some shreds of lymph; and the intestines were roughened. A laceration of the liver was discovered, extending in the direction taken by the broad ligament, quite through the substance of the organ, and to a depth of two inches and a half from the thin edge. Another laceration extended about

two-thirds of the length of the convex surface in a transverse direction; but this was not deep, and was in a state advancing towards separation. The omentum was rolled up, and brittle; the gall-bladder was ruptured near its neck, and quite empty and contracted; the structure of the liver, in the neighbourhood of the laceration, presented, on section, a very red and dense appearance; blood was extravasated around the right kidney; the other organs were healthy.

The author considered this case interesting from the absence of symptoms at an early period, evidencing the existence of such severe mischief as the post-mortem appearances revealed. The first attack of inflammation was checked by the abstraction of blood and exhibition of calomel. The subsequent fatal attack of peritonitis he attributed to the bursting of the gall-bladder, and consequent extravasation of bile.

Case of Malignant Tumor of the Os Uteri, excised during Labour. By J. M. ARNOTT, Surgeon to the Middlesex Hospital, and President of the Society.

The author first referred to cases of scirrhus, cancer, and other malignant growths of the uterus, in a state of pregnancy, proving the frequent fatality of this complication. He also adverted to the opinion maintained by some authors regarding the impropriety of excising the diseased parts under such circumstances, and considered the case he was about to narrate as illustrative of both the advisability and safety of the step in question. The subject of the disease (a lady aged thirty-eight) applied to the author in 1844 for an indurated enlargement of the anterior lip of the os uteri, which was rugged and granular near to the os itself: this was not tender, but bled under the examination. A consultation with Drs. Ferguson and Locock being held, it was agreed that the disease admitted of removal, as the neighbouring portion of the os uteri was healthy; but that, as the patient was at the time in the fifth month of pregnancy, it was desirable to defer operating until after the patient's confinement. Four months afterwards, the author was summoned to meet Dr. Locock, in consequence of labour being protracted by the presence of the morbid growth. This was still limited to the anterior lip and right side of the uterus, and had attained the size of a large green walnut: the tissue beyond and around appeared healthy. The diseased mass and contracted os uteri were forced down almost into view when a pain came on: hooks were fixed to the former, which was excised by a succession of strokes with curved scissors, and scarcely any blood was lost. Immediately afterwards the os uteri expanded uniformly, and in a quarter of an hour a healthy child was born. The patient had a

good recovery. On section the tumor presented a yellow colour and fibrous appearance. After an interval of some months, this patient was again the subject of frequent hæmorrhage; and it was then discovered that the posterior lip and cervix uteri were the seat of a similar disease, which extended this time beyond reach. She lived until June 1846, sixteen months after her confinement, when she died with all the symptoms of malignant disease of the womb. The author remarked that, in this instance, the lives of both mother and child were saved by the timely surgical interference; but he did not regard the case as illustrative of the usual condition met with in similar cases, which are rarely of a nature to admit of an operation under such favourable circumstances. He then narrated a case which occurred under his notice in the Middlesex Hospital, and in which the cancerous disease was much more extensive. After protracted labour, the os uteri was rent during a violent pain, and before the author arrived to relieve the tension by incisions. Two fetuses were born at the sixth month, and the patient subsequently rallied. The author concludes by remarking that, in cases similar to the last alluded to, incisions offer the first and best means of relief; but that when the malignant growth is confined to a limited portion of the os uteri, the alternative of excision, as in the case just related, should be entertained.

Dr. Locock would make a small addition to the first case detailed in the paper. Four or five weeks after delivery the patient seemed quite well; there was no portion of disease to be detected; and only a small cicatrix left from the operation, a cicatrix which was scarcely to be felt. This lady, having some anxious feelings respecting her case, kept the early symptoms of its return to herself, and it was only after repeated hæmorrhages, and at the expiration of nine months, that he (Dr. Locock) had seen her. The disease had then spread to the opposite side of the uterus, and pressed upon the rectum. The period was then gone by for any remedial means to be employed. The question of the propriety of operating in cases of this kind, during labour, had been mooted. This case showed that such operation was desirable. In these cases, where it was impossible to bring away a living child without operation on the tumor, he could not think that we were justified in sacrificing the lives of both mother and child by non-interference—a result which must occur if we did not use means to prevent it. It was, at all events, the salvation of one life out of two. He should never hesitate, under such circumstances, to attempt to save the life of the child, when possible, without exposing the mother to more risk than she would

experience by not operating. Now, in such a case as this, what was the practitioner to do? It was quite clear that there was only one proceeding which offered the least chance to the child—that proceeding was an operation. And let it be borne in mind, that if the child were not attempted to be saved in this manner, there was as much risk to the life of the mother by any other proceeding. Incising the uterus, no doubt, must be done at the risk of the mother, but, if successful, might delay the progress of the disease for some time; though occasionally, as was known, the disease spread more rapidly after operative means had been used for its removal. Still, we must never forget, in these cases, that without operation both lives would be destroyed; with it, probably only one, and perhaps neither.

Mr. LLOYD related a case of cancer of the uterus, affecting the anterior lip of the organ, which was tumefied and thickened. He could pass his finger quite beyond the diseased portion. Various applications were made to this growth without any beneficial result, and the pain and the discharge became so great that the life of the patient was threatened. Under these circumstances it was determined to remove the diseased portion, and as he was fearful of at once excising so large a part of the uterus, he passed a ligature entirely round the cervix uteri, by which he completely encompassed the tumor. There was some hæmorrhage, and a considerable discharge of serous fluid tinged with blood; the whole of the enclosed portion swelled enormously, so that the os uteri presented itself at the external orifice. There was so much pain that it was considered desirable to remove the diseased portion at once; this was accordingly done by a stroke of the knife, and the patient made a good recovery. A fungus, however, presented itself at the point of operation, to which escharotics were applied with complete success. The patient remained well for two years, when ulceration set in and eventually destroyed the greater portion of the uterus. The patient sank, and on examination after death, there was no trace of cancer in any other structure of the body. In three other cases he had removed portions of the os uteri for fungoid disease. In two of these cases the removal was effected partially by ligature and partly by caustic, and finished by an elliptical incision with the scissors. He eulogised the use of the potassa fusa and nitrate of silver in these cases; they prevented hæmorrhage, and sometimes cured the disease.

Dr. Locock said, that in excising portions of the os uteri for diseased growths, it was not necessary to use a ligature; there would be no alarming hæmorrhage from excision. In his opinion the ligature did more harm

than good. He (Dr. Locock) applied caustics after, rather than before, the operation, with the view of getting rid of any portion of the disease which might be left by the knife, and of arresting hæmorrhage.

Mr. ARNOTT said, that the question of the propriety of removing tumors from the os uteri was one of great importance. In some cases the tumors might be entirely removed, but in other instances you could excise them only. In the first case detailed, excision was resorted to, and there was no hæmorrhage; in the second case the disease was beyond reach, and the parts were incised only. In the case described in the paper by Dr. West, he (Mr. Arnett) had been called to the patient at twelve at night; the os uteri was situated high up, and there was great difficulty in reaching it to incise it. Notwithstanding what had fallen from Dr. Locock, you might have severe and dangerous hæmorrhage from incisions of this kind. In a case which had come under his care at the Middlesex Hospital, he had excised a portion of the os uteri, leaving the part above the division healthy. He had occasion in this case to apply the actual cautery three times, the blood pumping out to a fearful extent from an artery as large as the radial. The application gave no pain. Four or five days after, hæmorrhage again came on, but was checked by the injection of cold water. It returned, however, in a few hours, and it was only arrested by plugging the vagina.

Dr. Locock should have said, if he had not said it already, that there was no hæmorrhage in these cases which was not controllable by plugging the vagina. In the case related by Mr. Arnett, this proceeding should have been adopted in the first instance.

PATHOLOGICAL SOCIETY OF LONDON.

Monday, Dec. 6, 1847.

Dr. WILLIAMS in the Chair.

MR. HEWERT exhibited a specimen of

Fracture of the Cricoid Cartilage, with Emphysema, the result of injury.

A man, æt. 27, was admitted into St. George's Hospital, in 1843, under the care of Mr. Cutler, with a severe injury of the head; the accident had occurred in consequence of his having fallen from a scaffold, a height of about fifty feet, but his fall had been broken by various objects. When seen again, a short time after his admission, he was found to be suffering from urgent dyspnoea, and emphysematous crackling was, for the first time, observed about the root of the neck. The crackling thence spread very rapidly, and in a short time was perceptible in the cellular tissue of the upper part of the

body; the tongue was swollen, ecchymosed, and protruded beyond the teeth. No fracture could be detected about the ribs; the emphysema continued to increase, and was soon found in the lower extremities. He died three days after the accident, never having rallied from the head symptoms.

At the examination of the body, twenty-six hours after death, no fracture was detected about any one of the ribs, neither was any injury observed about the lungs. Emphysema existed in the cellular tissue of the anterior mediastinum and in the neck, which led to an examination of the trachea and larynx, when the right side of the cricoid cartilage was found to be fractured in two places on its anterior surface, a portion of the cartilage, about two lines in length, being thus separated from the other parts. The angles of this fragment were exceedingly sharp, and one of the superior had penetrated through the mucous membrane, where it had produced a jagged opening, of the size of a pea, which communicated freely with the cellular tissue of the neck, and had given rise to the emphysema. Several spots of ecchymosis existed about the chordæ vocales; no alteration of structure was observed in any of the cartilages of the larynx. The brain was extensively lacerated in several places, especially towards its lower part.

Dr. HANFIELD JONES exhibited a specimen of

Intestine after Dysentery.

W. S., æt. 22, waiter in a tavern, was admitted into St. George's Hospital, under Dr. Wilson, November 6th. He states that two or three months ago, he was taken ill with rigors, followed by pain in abdomen, diarrhoea, frequent passage of blood and matter in his stools, and accompanied with tenesmus. His abdomen was considerably distended, but principally by flatus, tender on pressure, with increase of pain while straining at stool, and tenesmus. He had frequent motions, which were dark and offensive, but contained no blood; the tongue was clean and glazy; he had thirst, but the appetite was tolerably good, and he took meat daily; the pulse was weak and quick; he was greatly emaciated, and had a sunken aspect. The lower limbs and scrotum were dropsical; the urine copious, and not albuminous. The chest was resonant at every part; the breathing rather harsh, and somewhat bronchial at apex of right lung; he had no cough, but stated that he had occasionally brought up blood.

During his stay in the hospital the symptoms varied but little; the diarrhoea continued, but no blood was observed in the motions; the pulse became extremely weak; the tongue sometimes brown and dry, and the appetite rather failed. On the 15th inst.

he was seized on a sudden with most acute pain in the abdomen, collapse soon came on, and he died on the 17th, with all the symptoms of a most severe attack of peritonitis.

Post-mortem, thirteen hours after death.—Apices of both lungs puckered, and containing small quantities of calcareous and cheesy matter; their structure in other respects healthy, with the exception of some congestion of lower and back part of left; heart natural; blood extremely fluid. A perforating ulcer in anterior part of transverse colon had occasioned general peritonitis; the intestines were agglutinated together by recently effused lymph. On the outer surface of the colon there were observed some dark spots, which probably indicated the situation of internal ulcers. On laying open the intestine, there was found only some mucous fluid, coloured by a small quantity of feculent matter; there was most extensive ulceration of the mucous coat, limited by the ileo-coecal valve, and not affecting the mucous membrane of the small intestines; in the caecum there was a good deal of healthy mucous membrane still remaining, and the same was the case towards the termination of the rectum. At the upper part of the caecum there was a small isolated ulcer, which had extended so deeply that the coats of the bowel gave way at this point during its removal from the abdomen. About three inches beyond the ileo-caecal valve, the destruction of mucous membrane was much more extensive; in fact, it had disappeared throughout a great extent, leaving a tolerably smooth surface on which the transverse fibres of the muscular coat were in many parts distinctly apparent; the intestine was denuded of its mucous coat to the greatest extent in the transverse colon, and here, also, the ulceration had extended most deeply, and the vascularity was most marked. What remained of the mucous membrane was raised into ridges and rounded prominences, separate or in groups; these had usually overhanging edges, and adhered to the sub-mucous tissue by very narrow bases; a deposit of black pigment was often found in this situation. On several of the prominent remaining portions of mucous membrane there were small round orifices to be seen, which perhaps may have been the opened mouths of solitary glands, but there was certainly no indication of a special affection of these structures. Several of the prominences and ridges of mucous membrane were examined by the microscope; they exhibited the characteristic structure more distinctly than sections of normal mucous membrane, the basement membrane being seen forming the defined margin of numerous low ridges, from which there had just separated an abundant quantity of columnar epithelium: beneath the homogeneous mem-

brane was a layer of nuclear particles with granular matter, which in some parts seemed to consist of minute oil globules; this layer was traversed by numerous Lieberbuchian follicles, which were very distinctly visible. The condition of the denuded intervening surface was different, no basement membrane being perceptible, only a somewhat condensed line of sub-mucous tissue, destitute of epithelium, and presenting but imperfect traces of a few Lieberbuchian follicles. The liver was healthy, with the exception of partial fatty degeneration of the margins of the lobules; no abscess could be discovered in any part of it.

Dr. JONES remarked, that the condition of the intestine in this case was rather unusual, as he had not found in authors any detailed description of a similar alteration: it seemed to have been produced by a peculiar kind of ulcerative action, almost intermediate between atrophy and ordinary ulceration. The morbid process which produced such destruction must have been of considerable activity, and yet its existence was rather manifested by emaciation and failure of the vital powers, than by any severe constitutional disturbance. The portions of mucous membrane not invaded by the destructive ulceration were of such a form and structure that it might almost be said that a true conservative hypertrophy had taken place in these parts.

Mr. COCK exhibited a specimen of
Rupture of one Kidney, with congenital deficiency of the other.

A boy, æt. 18, was admitted into Guy's Hospital, Nov. 8, having fallen from a considerable height on some rafters. He was in a state of collapse: abdominal tenderness referred to the left side gave evidence of some internal injury. Stimulants and opium were given, and, when he had rallied on the following day, the abdominal pain had increased, being more extended, and very severe on the left side; tumefaction had also supervened, accompanied with the other ordinary symptoms of peritonitis. On the introduction of a catheter into the bladder, a small quantity of blood only escaped. All the symptoms of the first injury and the subsequent peritonitis subsided in a few days under the usual treatment, with the exception that nothing but blood escaped by the catheter, which was used daily. On the subsidence of the tumefaction of the abdomen, a tumor was observed on the left side. He died on the eleventh day after admission, coma having supervened a few days previously.

On the post-mortem inspection, no traces of external injury were observed. There was blood-serum in both cavities of the chest. The mesentery presented an almost

black appearance, from a quantity of extravasated blood that was behind it. On the left side was observed a large fluctuating tumor connected with the kidney. On removing the intestines, a very large amount of extravasated blood was found on either side of the spine. The tumor was found to be formed at its extremities of either half of the left kidney, having a collection of urinous ammoniacal blood, separating them and distending the capsule to an enormous size. Thus a complete transverse rupture of the kidney had taken place, and it was found that one of the smaller branches of the renal artery lay in the open wound. This rupture extended through the pelvis of the kidney and thus allowed the blood to extravasate into the cellular tissue, which it traversed in all directions upwards to the diaphragm downwards, in connection with the psoas muscle on to the thigh. The kidney, though divided, was found to be twice as large as ordinary, and the ureter nearly twice its ordinary calibre. The right kidney was a mere rudiment, no right renal vein being found communicating with the vena cava, nor right renal artery with the aorta. The ureter was found twisted on, and terminated in a reduplication of itself, not having any communication with the bladder. Urea was found in the blood.

Mr. Cock had never met with a more illustrative case of the effect of urea circulating in the system; the boy, in fact, dying from its effects. He had little doubt that, had there existed a right kidney, recovery might have been rationally anticipated.

Mr. HAYNES WALTON exhibited a specimen of a

Variety of Colloid Tumor of the Neck,

removed from a female æt. 33.

It was situated on the right side, under the horizontal ramus of the jaw, extending from within half an inch of the symphysis to its angle, and passing backwards and downwards to within an inch of the clavicle. It was nearly spherical, appearing to consist of three lobes, with a well-defined outline, and standing out three inches from the natural contour (illustrated by a cast). It moved freely between the skin and the subjacent parts. The period of its development had extended over twelve years, having first appeared as a small lump just below the jaw. During the last year its progress had been very rapid, unattended, however, with pain or inconvenience till latterly, when it slightly interfered with deglutition. No organic disease could be detected. In the operation for its removal, which was unattended with any difficulty, the tumor was found immediately underneath the platysma, and, on section, was seen to be composed of

a semi-transparent jelly-like substance, arranged in cells, the walls of which were formed by fibrous tissue, which latter was found, on microscopic examination, to be more than usually abundant, and in different stages of development.

Mr. JOHN BIRKETT exhibited a specimen of

A constricted portion of Ileum, about six inches from Cæcum, which had fallen through a loop formed in the Great Omentum.

The constriction was not great. Adhesive inflammation existed all around, and the portion of intestine thus constricted was within the pelvis: it was greatly congested, and its calibre contracted. All the small intestines were covered at their points of contact with adhesive lymph. A small perforation had taken place about the commencement of the ileum, and allowed the escape of the contained matters. No trace of ulceration existed in any part of the canal. The specimen was taken from a man, æt. 28, who had suffered from the symptoms of intestinal obstruction for five days prior to death.

A Double Vagina and Uterus,

from a woman æt. 50, who had been married, but never bore children, and had died from pneumonia and pericarditis. The vagina was completely divided in the mesian line by a strong, dense, fibrous septum, extending from the external opening to the uterina. Thus two vaginæ existed: each vagina led to a distinct os uteri, both of which were small. The neck of the uterus was rather longer than usual; the body smaller. The uterus itself was nearly divided into two cavities by a septum in the mesian line. The ovaries, Fallopian tubes, and ligaments, were involved in one general adherent mass of old standing. The Fallopian tubes were pervious for some distance from the uterus.

A Fibro-plastic Growth from the Left Auricle,

taken from a woman æt. 52. It projected from the septum auriculi into the cavity, nearly filling it. The peduncle was of considerable size, and attached to the anterior border of the fossa ovalis and septum. The surface of the growth was irregular, the irregularities of the size of peas. Though it resembled, it appeared firmer than, jelly. A section exhibited its organized nature; for vessels were seen traversing the tissue in its long diameter; also fibrinous, sanguineous, and gelatinous-looking structures were distinguishable. The new growth belonged to the class of fibroplastic of Lebert and others. Similar growths are described by Bouillaud, Rokitsky, &c.

Dr. LLOYD had had an opportunity of seeing this case during life, and had remarked a bruit, with the second sound of the heart, under the nipple, and which no doubt had arisen from the tumor in the contraction of the auricle falling down and obstructing the course of blood through the auriculo-ventricular opening. The pulse was irregular and intermittent, and she fainted occasionally. The circumstance that the latter symptoms had existed but six or ten weeks, led to the inference that the tumor was of recent formation.

Mr. AVERY exhibited a specimen of *Aneurism of the Arch of the Aorta, which had caused Death by ulcerating into the Left Bronchus.*

A conductor of an omnibus, æt. 42, who was a very stout muscular man, and, up to the day of his death, had enjoyed good health, with the exception of his complaining of being a little "out of sorts" during the last fortnight. This did not, however, prevent him following his usual occupation. On the day he died he was given in charge for having stolen a macintosh; and, greatly excited by this, he suddenly brought up a large quantity of blood, fell down insensible, and, before he could reach Charing Cross Hospital, expired.

The aorta, about an inch below the left subclavian artery, and just where it crosses the left bronchus, presented an irregular opening the size of a sixpence, leading into a small irregular cavity, which would hold at most the half of a good-sized filbert. At the bottom of this cavity two of the rings of the bronchus lay exposed, but still smooth and shining. The substance between these rings was ulcerated and rough, so that the rings stood in relief at the bottom of the sac. On opening the bronchus from behind just opposite this part, there was seen a round prominence, as large as a small grape, projecting into its interior so as almost to fill it. This seemed composed of organised fibrin, and plugged the ulcerated openings between the rings, and must have existed some time. A probe could, however, be passed from the sac into the bronchus on that side of the plug towards the lung, and here, no doubt, the blood made its escape into the bronchus. The opening of the aorta into the sac was perfectly smooth, as well as the lining membrane of the latter, excepting at the parts between the rings of the bronchus. The aorta in other parts presents several thick atheromatous patches, but no erosion or other dilatation. All the tubes and air-cells of the left lung were completely distended with blood, and a considerable portion of the right lung was in a similar condition, but none of the pulmonary tissue lacerated.

Dr. COLEY exhibited a specimen of *Hydatid Tumor of the Spleen, and large Abscess of the Gall-Bladder.*

A man, æt. 40, was admitted, under Dr. Coley's care, in the Royal Fimlico Dispensary on October 20. He was much emaciated, and had an atra-bilious complexion. An obscure tumor, which was remarked by Mr. Pettigrew and himself below the umbilicus, had existed ten or twelve years. It was hard, tender, and somewhat inflamed, and appeared to be adherent to the parietes of the abdomen and the right lobe of the liver. Below the umbilicus it extended downwards about five inches, and was about four inches in its width from side to side. The pulse was at 84. On the fourth day the swelling had become more extended and prominent, and fluctuated distinctly, particularly towards the umbilicus, where a projection was observable.

On the seventh day, the swelling, which was found to be an abscess, had burst at the navel, and discharged an immense quantity of purulent matter mixed up with flakes of lymph. On the eleventh the discharge had much diminished, and was mixed with bile. Hectic fever supervened, and the patient died in three weeks.

On the post-mortem examination the abdomen was found remarkably concave, the sac of the abscess to consist of the gall-bladder, which was enormously enlarged. Its coats were thickened and inseparably adherent to the peritoneum and the recti muscles. The liver was perfectly healthy.

On the upper portion of the spleen was discovered a thick firm sac, as large as a large cocoa-nut, which was filled with hydatids of various sizes, some of which were capable of holding several ounces, and others not so large as the smallest pea. The hydatids were all single, not containing any others within them, and their contents were a thin limpid fluid. They all reposed in a bed of what appeared to correspond with the description given of cacoplastic matter. That portion of the cyst which was not adherent to the spleen had formed so intimate an adhesion to the peritoneal coats of the stomach and transverse arch of the colon, as to require careful dissection for its removal. The part connected with the spleen proceeded from the tunica propria of that organ. The inferior portion of the spleen presented the appearance of a granular degeneration. In the microscopic examination, which had been made by Dr. Lankester, aggregated masses of echinococci were found in the smaller cysts, crystals of cholesterine in the walls of the larger. In the imperfectly organized masses, also, were contained cholesterine, with crystals of the ammoniaco-magnesian phosphate.

A specimen of

Ulceration of the Glottis, with Destruction of the Epiglottis,

taken from a woman, æt. 35, who had come under Dr. Coley's care on Nov. 24, suffering from laryngitis, which had been contracted three weeks previously from exposure to cold. The operation of tracheotomy by Mr. Pettigrow, and the administration of mercury, was attended with such relief to the symptoms on the third day after Dr. Coley had seen her, as to lead to confident hopes of her recovery. She expired, however, under a sudden re-accumulation of the symptoms, on the following day.

A post-mortem examination was made about six hours after death. The right cavities of the heart were found gorged with dark venous blood, the left cavities and the large systemic arteries being empty. The pericardium contained six ounces of serum. The glottis was in a state of ulceration, which had entirely destroyed the epiglottis. The mucous membrane lining the larynx was so much thickened, that its natural calibre was exceedingly reduced. The ulceration of the glottis was deep and well defined, especially on the right side. The membrane lining the trachea was slightly inflamed, but free from ulceration, and the mucous upon it was rather thicker than natural.

Dr. LELOYD exhibited a specimen of

Strumous Disease of the Kidney,

taken from a woman, æt. 23, who was admitted into Guy's Hospital with symptoms of stone in the bladder, and died of disease of the heart.

The tubular portion of the left kidney (the right being quite healthy) was the seat of the scrofulous deposit; the pelvis was inflamed; the ureter much thickened, and ulcerated in parts; the bladder also ulcerated and contracted. The mesenteric glands were slightly diseased.

Dr. Lloyd was uncertain whether the state of the diseased kidney presented the result of pyelitis, or the deposit of strumous matter in the substance of the organ between the tubules.

Dr. WILLIAMS inclined to the former view.

The meeting adjourned to Monday, Dec. 20, 1847.

WESTMINSTER MEDICAL SOCIETY.

Saturday, December 4.

Dr. WENSTER, PRESIDENT.

The Prevailing Influenza.

Dr. LANKESTER, in allusion to the great valence of the present epidemic, observed

that, contrasted with the influence of former years, one of the characteristics of the present visitation was its greater prevalence and less severity. He had found among the patients attending the Finsley Dispensary that many were affected by bronchitis; but out of one hundred and fifty instances of the disease he had met with but two cases of pure pneumonia. Sore throat obtained in about half the cases; this symptom was attended by difficulty in swallowing. In some instances, the disease became even diphtheritic. The general nervous symptoms, the depression and pain in the head, were similar to those which had been exhibited in former epidemics. The same law with respect to depletory measures held in this as in former visitations; for, however urgent the symptoms appeared, depletion was but ill borne. Generally, he thought the less we did the better, for debility would follow any kind of active treatment. He had seen one case assume all the characteristics of typhoid fever from too active treatment.

Dr. GEORGE WARD said, that in Kensington the influenza presented the usual characteristics enumerated by Dr. Lankester. The pain in the head was the most general symptom; the sore throat prevailed in four-fifths of those attacked; and he had usually found it best relieved by an inhalation of warm vinegar and water. It was by no means a violent disease. The only case he had seen of much severity was a case similar to diphtheria, and which he had successfully combated by Bretonneau's system. In some cases in which the pain in the head was most severe, the pain had been relieved by spontaneous bleeding from the nose. This might be a useful hint for practice, but he had never ventured on even local bloodletting.

He then read a paper on

The treatment of Asiatic cholera in the stage of collapse.

He confined his observations to the collapsed stage as being the most fatal, and, therefore, the best test for the utility of remedies; and in order that he might effect his purpose of ascertaining the most efficient remedies impartially, neglecting the results of his own experience, derived from nearly 400 cases, he had investigated the numerous reports and returns to government on the subject, and had thence selected those remedies which, from the statistics of the numbers cured by their use, or from the description of their direct effects, appeared to be most trustworthy; and he had the candour to state, that by this process he had been induced to regard with more favour certain remedies which a prejudice, derived from a limited experience, had led him to consider as worse than useless. In reply to those who thought no treatment of any

service, he instance the frightful mortality in India, Persia, and Russia, where little or no medical aid was procurable; and took occasion to congratulate the medical men of this country on the low rate of deaths (one-third) compared with the mortality in France or any country in Europe, which he attributed, under Providence, to their superior practical knowledge of disease in general. The idea of the nature of cholera that seemed most consistent with its symptoms and with the effects of treatment was, that it is the prolonged cold stages of a peculiar form of fever, presenting more analogies with continued than intermittent fever, the effect of a poisonous miasm, which, if very intense, destroys the patient, without the occurrence of any active symptoms, in a few hours; but in other cases induces a gradually increasing congestion of the internal venous system, which relieves itself by the effusion of serous fluid into the stomach and bowels, which is as speedily removed by the actions of vomiting and purging. The blood thus deprived of its serum becomes thick and black, and is deprived of its vital properties to such a degree, that, unable to imbibe oxygen in the lungs, it ceases to stimulate the heart, which organ is thus unable to propel the blood to the extremities or through the lungs. This is the stage of collapse, in which the patient is blue, cold, pulseless, and voiceless, and his features are shrunk to such a degree that his dearest and nearest relatives do not recognise him; and this is the most fatal stage and that least under the influence of remedies. Nevertheless, even under these deplorable circumstances we must not relax our exertions; and the list of curative means employed with success, proves that much may still be done for the relief of the patient. The most approved external remedies were, external heat, cold affusion, and counter-irritants. The author attempted to account for the favourable opinion of the application of cold in Persia, and of heat in Russia and the rest of the northern countries, partly by the concordance of such ideas with the ordinary feelings of the inhabitants of such different climates, and partly by the notion that in Persia, where the thermometer is above 96° in the sun, the patients, exhausted of their fluids by the disease, would be dried up and untempered by any attempt to keep up the temperature of the body by exposure to the sun's heat; whereas in Russia, &c., it was supposed, and probably with truth, that as cold is a direct sedative, its opposite, heat, was necessary to restore the vital powers. All the reports concur in the efficacy of cold affusion in inducing reaction; and its success appears to have been in proportion to the violence of the shock. Counter-irritants were successful only in connection with other reme-

dies; but they deserve attention from their stimulating power, and their readiness of application. Bloodletting was useful in every stage in relieving the congestion and rousing the heart by removing the load that oppressed it. In the state of complete collapse salt-and-mustard emetics, to excite the system, followed by bleeding, was a favourable mode of treatment. The internal remedies most to be relied on in the stage of collapse may be classed under the heads of revulsives, stimulants, and specifics. The first class, besides emetics of salt and mustard, comprised tartar emetic and croton oil, and calomel in large doses. The effect of each was to check the vomiting and purging; but the three last were remarkable for their power of restoring the flow of bile, of a dark-green colour, when tartrate of antimony or croton oil had been used; and like blue ointment, when the calomel had been given. The action of all three is supposed by the author to be irritating to the mucous membrane of the stomach and bowels, of which it stops the secretion by changing the action of the part. The blood thus diverted from the membrane returns without loss into the portal system, and, by the secretion of fresh bile, previously pent up in the gall-bladder, is expelled, the spasm of the duct having been relaxed by the irritation of its orifice, produced by the tartrate of antimony, calomel, or croton oil. The blue colour of the bile when calomel was used may perhaps be explained by the decomposition of the salt by the alkali of the bile. From the number of returns in its favour, besides the extensive experience of the author in its use, he is disposed to place most reliance on the croton oil, as its action is simply irritant, (many of the patients complaining that it made their throats sore when given in solution or suspension); whereas the tartar emetic is a direct sedative, and, hence, may be dangerous; and the author had given calomel most extensively in large doses without ever having seen such effects produced as those which he has mentioned above from the reports of others. Stimulants, after a fair trial, were almost universally condemned; and yet it is remarkable that M. Magendie had more success with his punch than any other of the Parisian physicians. His great rival Broussais was so unsuccessful, that he entirely relinquished his care of cholera patients at Val de Grace. Opium, either in small doses as a stimulant, or in large ones as a sedative, was equally unfit to be relied upon. The last class—specifics—comprises calomel, with or without opium, cold water, salines, and quinine, although the author never met with a single case of real cholera in which he could trace the recovery of the patient to the influence of calomel, nor ever observed that it produced

any specific effect whatever; still, from the almost unanimous approval it has met with, and his own experience of its benefit in English cholera, he would strongly recommend it for future experiment, as being, at the least, perfectly harmless, though taken in enormous doses. He would also adopt the use of cold water *ad libitum*, upon the faith of the reports in its favour, though his own experience is decidedly opposed to it. Salines, on the other hand, when well diluted, have, besides a number of most favourable reports of their efficacy, this hypothesis in their support—viz. that they restore to the blood by their endosmosis through the coats of the vessels, if not by their being absorbed directly into the circulation, the saline matter removed by the serous evacuations; whereas, the water, if it be not rejected by vomiting, as in the author's experience, could scarcely be absorbed, the tendency of the venous system being to empty itself; nor, if it were absorbed, could it supply to the blood those saline elements of which it had been deprived. In the author's experience, the best mode, though a painful one, of arresting vomiting in all cases, is to keep the stomach empty; when, after a time, it will cease to suffer the action of vomiting, whatever that may be. From an attack of English cholera he suffered, and thus cured, the last efforts of which produced only bloody mucus, as well as from other similar results after emetics, the author believes that the stomach contracts itself during vomiting. Quinine, viewed in reference to the hypothesis of the intermittent nature of cholera, seems worthy of further trial than it has yet experienced. In conclusion, the treatment recommended by the author in the stage of collapse would be the following, and much in the same order as the remedies are stated:—Cold affusions; hot air; external counter-irritation, and frictions; venesection; mustard-and-salt emetics; cold water *ad libitum*, or Dr. Stevens' salines; calomel, and tartrate of antimony, alternately, in large doses; and, if all failed, croton oil.

Dr. LANKESTER spoke of the fallacies likely to arise from placing too much dependence on individual experience in this disease; we could scarcely arrive at any definite conclusion from the treatment of fifty or a hundred cases in any single district. Every remedy which had been employed had its advocates, among others he might allude to one not mentioned by the author—carbonic acid, which was said to be most successful. We must, in the absence of sufficient information on the subject of treatment, reason from analogy, and after observing the symptoms, inquire what would relieve analogous symptoms in other diseases. Let them take the collapse, for instance: in this condition the blood all left the surface, and

the internal organs were congested. To bring the circulation back to the skin was clearly indicated; hence the application of hot air to the surface, and stimulating liniments, were recommended and said to be used with success. In Russia, camphor liniments for this purpose have been found of great service. Another object was to supply to the blood the fluid which was lost by the copious watery evacuations. These evacuations took away the saline matters from the blood, and hence cold water with salines was no doubt an important agent. But salines, when so administered, must be given in small quantity in large quantities of water, for if the opposite were employed, it would defeat the object of the administration. The liver was evidently deranged in these cases, and it was most important to restore the action of this organ, for he believed it was quite proved that the presence of bile in the intestines was essential to the production of animal heat. Calomel was hence indicated, but not, he thought, in large doses; it might be combined with small doses of opium to prevent its being carried off by the bowels.

Dr. KING had the charge of a large district during the prevalence of cholera. At first he was quite at sea how to act in the stage of collapse. He first employed Stevens' plan of salines, with small doses of calomel and opium; but almost all the cases were fatal. He then pursued a stimulating plan, with a similar result. He ultimately adopted the system recommended and practised by Mr. French. He placed a pail of cold water by the bedside of each patient, and allowed them to drink *ad libitum*; when the patient began to vomit, he considered, as a general rule, that he would do well. He should mention that, in addition to the water, he gave large doses of calomel, which might have had a share in producing the result. Those who recovered were all more or less affected with the calomel. When hiccups came on, he considered the patient out of danger. He found bile in the evacuations after this treatment, the fæces being of the colour of the blue mercurial ointment. He did not think the heart the chief seat of the disease. All pregnant women died. He spoke of the necessity of perfect repose in the treatment of the disease, and stated his belief that many patients had died on removal to the hospital. More success attended those who were treated at their own homes. Croton oil, according to his experience, was not of service. Hot air applications did harm; cold air was preferable. Brandy and all stimulants were injurious.

Mr. FRENCH said, that in conducting the treatment of the collapse of cholera, before using indiscriminately the articles of

the *materia medica*, we should study the curative process adopted by Nature to this end. We readily enough admit that this kind of knowledge is absolutely necessary in conducting the treatment of mechanical injuries, and that surgery is only a successful art when this principle is borne in mind. The mode in which reaction is accomplished by Nature from the state of collapse in cholera, is a process with which I am perfectly familiar, by direct observation, and it is very simple. It consists in absorption of water into the bloodvessels, and in vomiting. It may be confidently stated, that a patient who is no longer purged, and who is vomiting, is undergoing reaction in the most favourable way possible; just as "adhesion" constitutes the most favourable and rapid cure of certain wounds. But to state the method more fully, it may be thus expressed:—

1st. Absorption of water into the bloodvessels; the patient's intense thirst inducing him to take this fluid freely.

2ndly. Nausea; which produces a general relaxation of the system, thus diminishing obstruction to the passage of the blood in the vessels.

3dly. Vomiting; which mechanically assists in driving forward the blood in the congested vessels.

In the more intense states of collapse, the process of reaction is not established before the vomiting has continued for three days. In slighter cases, collapse, reaction, and convalescence, may all occur in twenty-four hours. When, however, the disease pursues this course, cases which presented the most hopeless aspect may do perfectly well, either becoming directly convalescent, or if local congestions and inflammations ensue, they assume an active character, and are under the control of art, while if this process has been frustrated, they commonly pass into a state of congestive and typhoid fever, in which they either sink or recover with great difficulty. As to the essential nature of the disease, I believe it consists in a poisonous influence which is exerted directly on the heart, depressing its action; for these reasons:—

1st. The heart's action is always diminished in this disease.

2ndly. No essential lesion of any other vital organs really exists.

3dly. All the other symptoms and physiological conditions admit of explanation on this hypothesis.

The first argument is admitted by all observers. It will be also admitted that the functions of the brain are remarkably well performed until the very period of death. Then, there is no asphyxia, for these reasons—the mechanical apparatus is undisturbed. We are familiar with the symp-

tom, "coldness of the breath," (inconsistent with asphyxia;) the recumbent position, so necessary to the cholera patient, would not be suitable for the state of asphyxia. Dr. Parkes, who has recently published a work replete with interesting facts on cholera, denies the paralytic condition of the heart, because the left ventricle was always empty: he also found that the lungs were extremely collapsed, and infers that the cause of the arrest of circulation must be sought for in the blood itself. The average duration of the disease, in the cases in which Dr. Parkes made post-mortem examinations, was ten hours; the observations were made sometimes a quarter of an hour after death; in all the cases the heart was found inirritable to the stimulus of the knife, while the muscles contracted under this stimulus. With the hope of learning something on these points, I destroyed a rabbit in two hours by repeated doses of infusion of digitalis; the animal became gradually too feeble to move, breathed quickly, and died: on opening the body, the heart was still feebly pulsating. The lungs were completely collapsed, and the left lung was so firmly contracted, that it sank in water; it readily admitted of inflation. The right side of the heart contained blood, and there was a very small clot in the left auricle; but the left ventricle was perfectly empty. The heart was quite as irritable to the galvanic stimulus as the muscles. From this experiment I infer, that the influence of cholera on the circulation is exerted in the same way as that of digitalis. With regard to the condition of the blood in cholera, I believe it to be the best under the peculiar physiological condition of the patient. Blood in the normal state is intended to be constantly circulated with a regulated amount of force. If this force be exceeded, we find that the fluidity of the blood is increased, that it acquires a brighter hue, and that it possesses the power of coagulating more firmly when stagnant. The converse of all this obtains with diminished force of circulation. To this alteration in the constituents of the blood is possibly owing to the absence of fibrinous deposits in the heart of the vessels; the retention of its homogeneous condition, and its adaptation for the re-admixture with water during reaction, so soon as the baneful effects of the poison shall cease to be exerted in the system. Thus to sum up:—In proportion to the force with which the circulation is controlled, either death results, or the blood is diminished in quantity, and altered in quality, by a secretion from the alimentary canal—the overwhelming effects of sudden congestion and fibrinous deposits being probably thus prevented.

Dr. AYRES had found more success from the employment of stimulants, in the stage

of collapse, than from any other remedy. He had given brandy in large quantities, and opium, with the view of relieving the cramps, which were so distressing. He differed from the views advanced by Mr. French, respecting the pathology of the disease, and thought that the loss of the fluid alone was sufficient to explain all the effects on the circulation.

Dr. WEBSTER remarked that it was satisfactory to know from the Reports of the Registrar-General, that last week no case of cholera had occurred in London—that two had occurred in the first week of November and seven in October; and that in the summer quarter ending September 1847, there were only 98 deaths from this disease, whilst in the corresponding quarter of 1846, there were 197 deaths from this cause.

Dr. WARD, in reply, said that he confined his remarks in the paper to the treatment of the disease, more from the experience of others than from his own; but he might observe that, curiously enough, he was in a district close to that occupied by Dr. King, in Staffordshire, without knowing it, until the remarks made by that gentleman on the present occasion. He might observe that he had tried the cold water plan recommended by Mr. French. The first case was favourable to its employment, but future experience has showed him that it was not a successful plan of treatment. Pregnant women attacked with this disease after aborting, all died. He had employed croton oil in the fifteen cases, all of which recovered but one, who died from the secondary fever.

MEDICAL SOCIETY OF LONDON.

Monday, Nov. 28, 1847.

MR. DENDY, PRESIDENT.

Brain Disease in Connection with Disease of the Ear.

MR. PILCHER exhibited a portion of the brain of a child who had been the subject of ear disease. The child sunk immediately, from acute abscess in the left hemisphere of the brain consequent upon the ear disease. On examination after death an abscess was discovered in the lateral ventricle, communicating with the other collection of matter. This latter abscess bore the appearance of being of long standing, and was surrounded by a thick, dark, lining membrane. The question to be decided was whether this latter abscess was an old or a recent formation; if old, it most probably had existed for years. To show the way in which disease of the brain might occasionally, for a time, be masked, or the symptoms suspended, and the disease afterwards prove suddenly fatal, he related the case of a little girl who had suffered from ear disease, at-

tended by much purulent discharge. Convulsions attended the disease, but these became much less frequent, and she recovered almost her usual health. She was so much better, indeed, that the practitioner in attendance was puzzled. The patient one day went to sleep and never awoke. An abscess was found occupying one of the lobes of the cerebellum, capable of containing four ounces of pus, and surrounded by a distinct cyst.

Mr. HIRD remarked that the experiments of Mr. Mayo had seemed to establish that when pressure was exerted downwards, as in the *last* case related, paralysis was almost always the result; but when the pressure was exerted latterly, no symptoms might present themselves. He (Mr. Hird) had seen cases in which disease of the cerebrium and upper portion of the brain was present without any, or with but few symptoms; when the disease was situated at the base of the brain, involving the medulla oblongata, symptoms were always present.

Dr. BENNETT related a case of extensive disease involving a greater portion of the medulla oblongata, which was not attended by symptoms of that mischief, until within a few hours of the death of the patient. The child was of healthy appearance. Squinting was the first symptom which developed itself—this was followed by convulsions. After death a tubercular mass was discovered, involving the greater portion of the medulla oblongata, and as large as a full-grown walnut.

Dr. CROWNE related two cases, to show that disease at the brain might exist to a considerable extent without any evidence being exhibited of the seat of the mischief. The first of these cases was that of a young woman who was admitted into Charing Cross Hospital with what might be called general illness. She had acute headache; fever, sometimes remitting, sometimes intermitting, and a peculiarity of expression of the face. She died, and an abscess, affecting one hemisphere of the brain, was discovered. In the second case, the patient was a young man admitted into the hospital "very ill," but complaining chiefly, if not entirely, of pains about the right side of the neck, like rheumatism. The neck was fomented. The countenance was peculiar, and such as he had noticed before in cases of brain disease. He suffered from severe inflammation of the ear, suppuration came on; he lived several weeks, but had no pain in the head. A small abscess was discovered situated at the upper part of the middle lobe of the cerebrium. A yellow, thick, tenacious pus was found in the abscess. He referred to a case, which had been related to the Society some time back, of a merchant who continued to conduct an extensive and anxious business

to within two or three days of his death, and on examination it was found that the anterior lobes of each hemisphere of the brain were softened to a considerable extent.

Some discussion followed on Dr. Wigan's theory of the quality of the mind.

Monday, December 8.

Dr. COGSWELL read the following interesting account of the

History of Chloroform, and its use as an Anæsthetic Agent.

However Dr. Simpson's claim may be decided upon as to the priority of administering chloroform vapour, (and it now appears the honour is contested by some persons or persons alluded to by Mr. Bell, with regard to the human subject, and by M. Fleureau, who tried it on an animal,) he is certainly entitled to the credit of giving it a world-wide reputation. From the historical references, by Dr. Pereira, in the *Pharmaceutical Journal*, lately re-published in the *Medical Gazette*, it would appear that chloroform was obtained by Mr. Samuel Guthrie, of Sackets Harbour, New York, by distilling a mixture of chloride of lime and alcohol. He supposed, however, that he had only procured chloride of olefant gas, or chloric ether, by a new process. His communication in *Silliman's American Journal of Science and Art* for January, 1832, is entitled, a "New mode of preparing a spirituous solution of Chloric Ether." And he proceeds to state, that he had used the product very freely during the previous six months, to the point of intoxication; that he had found it singularly grateful, producing promptly a lively flow of animal spirits and consequent loquacity, and leaving little of the depression consequent on the use of ardent spirits; that it promises much as a remedy in cases requiring a safe, quick, energetic, and palatable stimulus, and that for drinking it requires an equal weight of water. Subsequently, Dr. J. Black, of Bolton, in the *Medical Gazette* of September, 1833, has an article on the same chemical product, headed, "Chloric Ether: New Remedy in Spasmodic Asthma." He calls this ether a solution of chloride of carbon in alcohol; mentions it as "brought into use by our American brethren," considers it a most agreeable and diffusive cordial, and likely to be of service in spasmodic and adynamic states; and adds, "I have used it frequently in doses of about half a drachm, according to its strength, and from my short experience I am disposed to think it will be of more positive benefit than any of the muriatic or sulphuric ethers." For this reference I am likewise indebted to Dr. Pereira. Following the same authority, we find that, about the same time as Mr. Guthrie, M. Soubeiran also distilled a mix-

ture of alcohol and chloride of lime, and after a somewhat erroneous analysis, named the product bichloric ether. A division of his paper in the *Annales de Chimie et de Physique* for 1831, on the combinations of chlorine, is headed, "Action du Chlore du Chaux sur l'Alcool." Next Liebig examined the product, and finding no hydrogen, termed it chloride of carbon. Thus far its real composition remained unascertained.

In 1834 M. Dumas determined its true elementary constitution, and gave it the name of Chloroform, which, together with that of Perchloride of Formyle, since proposed by Liebig, it continues to bear almost indifferently. In 1842, Dr. Glover, of Newcastle, (a corresponding member of this Society and author of its Fothergillian prize essay on Scrofala,) published in the *Edinburgh Medical and Surgical Journal* an essay on Bromine and its compounds, which had gained him the Harveian prize of Edinburgh. A chapter of this publication treats "of the physiological properties of the bromide and chloride of olefant gas, of kromoform, chloroform, and iodoform." In a similar essay of mine some years before, on iodine and its compounds, I had remarked, that whereas the physiological action of the metallic compounds is characterized sometimes by the predominance of one element, sometimes of the other, the sesqui-iodide of carbon, as it was called (iodoform), seems to throw off all connexion with the group, and by its singular action on the nervous system allies itself to certain organic agents, such as strychnine and brucine. Struck with this result, as he has stated, Dr. Glover examined the action of the other bodies just named, using chloroform particularly, as the most characteristic, and noticed, among other effects, that the lungs became congested, and the spinal cord loses its sensibility, under the influence of this class of poisons. He suggested, however, that their properties were "not unlikely to be beneficial in the treatment of disease." There is nothing obscure or hesitating in Dr. Glover's conclusions, which were prominently put forward in the press. He used the liquid chloroform by injection into the stomach, the bloodvessels, and the peritoneal cavity.

The employment of chloroform in the form of vapour is mentioned in the *Pharmaceutical Journal* for February 1847, where the Editor, in a note to a communication "On the inhalation of the vapour of (sulphuric) ether," says, "Chloric ether has been tried in some cases with success; it is more pleasant to the taste, but appears to be rather less powerful in its effects than sulphuric ether." There is nothing in the journal itself to denote that this chloric ether was chloroform, or that

the experimentalist was Mr. Bell himself, but we are assured of both facts by a competent authority in the *Medical Gazette*.^{*} Subsequently M. Flourens caused an animal to respire the vapour of chloroform, so that it became unconscious of pain under a severe vivisection.

I have reason to know that Dr. Pereira has been in the frequent habit of using chloroform medicinally, both in hospital and private practice, for several years past.

Medical Trials and Inquests.

FEES TO MEDICAL MEN AT CORONERS' INQUESTS.

SYNNOT V. MILLS.

At the Bloomsbury County Court, on Wednesday, an action was brought by Mr. Synnot, surgeon, against Mr. Mills, deputy coroner for West Middlesex, to recover £1. 1s. for attending to give evidence at an inquest held by that gentleman. The case stood over for the consultation of the acts of Parliament relating thereto. The defendant said he could not deny that the plaintiff had given evidence at an inquest, but he had only been summoned to do so as a common witness, and not to give medical testimony, which required a particular form. His opposition was on the ground that the patient had thrust himself forward as a witness, having, prior to the assembling of the jury, by permission of the friends of the deceased, opened the body and carried away those portions which alone could explain the cause of death. The 6th and 7th of Will. IV. enacted that witnesses should be paid by the coroner under certain circumstances, and he contended that the plaintiff made a claim under circumstances not legal. The judge observed that the act of Victoria I, chap. 68, sec. 2, totally repealed the one defendant had referred to, as it expressly stated that immediately an inquest terminated, all witnesses and other incidental expenses shall be paid by the coroner, who will be reimbursed by the justices at quarter sessions, the different sums allowed being stated therein, among which was medical fee £1. 1s. Only the last Trinity Term, Lord Denman had tried a case heard on a mandamus against the justices of Caernarvon, who refused to allow a coroner for a medical witness, but whom, by the decision of his lordship, they would be compelled to pay. In fact, according to the act he quoted, they had no discretion in the matter, and he was of opinion that it was of no consequence which summons a medical man received, for if even he was in a room, and should unexpectedly be called upon to give evidence, he could substantiate his demand.

^{*} It was used by Mr. Arnott in operations at the Middlesex Hospital.—*Ed. Gaz.*

Plaintiff.—My evidence was strictly medical, and if I had not attended when summoned, I should have subjected myself to £5 penalty.

Judge.—It would be a very bad precedent to confirm the non-payment of a medical man summoned as a witness, and great difficulty would by so doing arise in getting such witnesses to attend inquests. This action, instead of being brought in "tort," has been instituted as though a contract existed, through which technical mistake the plaintiff is liable to be non-suited; but he can, of course, recover by obtaining a mandamus, and I, therefore, should advise you, Mr. Mills, to take the case into your own hands.

The defendant agreed to pay the plaintiff, although, at the same time, he felt convinced his Honour was wrong in the construction of the act.—*Observer*.

ACTION FOR THE LOSS OF AN EYE; NON-ATTENDANCE OF MEDICAL WITNESSES.

THE following case was tried last week in the Court of Common Pleas, Westminster:—

KEELEY V. O'CONNEL.

This was an action to recover compensation in damages for an assault committed upon the plaintiff by the defendant, by which the plaintiff had irrecoverably lost the use of one of his eyes.

Mr. Petersdorff appeared as counsel for the plaintiff; the defendant was not represented by counsel.

It appears that during a quarrel at a public-house, the defendant took occasion to deal a severe blow at the head of the plaintiff, the effect of which was to close up and seriously injure one of his eyes. The plaintiff and his comrades then withdrew from the defendant's house. Three days afterwards the plaintiff applied for surgical relief to the Charing-Cross Hospital, of which he continued an out-patient for five months. After the expiration of that period he became an in-door patient at the Ophthalmic Hospital for six weeks, where an operation was performed on his eye by Mr. Guthrie, one of the surgeons of the institution, but which was without success, and the defendant has now irrecoverably lost his sight in that eye. Mr. Guthrie, the surgeon who had performed the operation on the plaintiff's eye, was not in attendance to give evidence on the trial, all efforts to subpoena him having been fruitless. He was out of town, and his relatives, who had been applied to for his address, were unable to give it, stating that his professional avocations rendered it inconvenient for him to attend the trial.

Lord Chief Justice WILDE, in summing up the case, told the jury that he could not but lament to find that when the plaintiff's case would have been benefited by the attendance of a professional gentleman he had

been deprived of his evidence. Whilst acknowledging the extremely benevolent character of the surgeon's profession, he had to lament that a gentleman in that profession appeared to have endeavoured to avoid the inconvenience of attending the trial—a duty which, to a poor man like the plaintiff, it was to be regretted was not performed. *It was the duty of those professional persons to attend to the administration of justice.* The parties, however, were not to suffer for that omission to-day, but the case was to be decided by the evidence before the Court, though, from the circumstance to which he had adverted, it was left in a considerable degree of uncertainty. With respect to the question of damages, the jury would take care that while they gave a just remuneration to the plaintiff for so much of the injury as they found from the evidence had been inflicted upon him by the defendant, they did not fasten upon the defendant more than by law and justice he ought to be responsible for. What was the evidence? Unfortunately they had no account of the plaintiff's habits and pursuits between January and June, when the surgical operation on his eye was performed. That was a very long interval to pass, if they were to fasten upon a man the state of another in the month of June or July in consequence of a blow given in the preceding December. One would have desired to have had some further account. The plaintiff, from the time of his entering the hospital, whenever it was, appeared to have been attended by three surgeons, who would have been able to give an account of the state of the eye, and whether the state in which the eye was found in June or July was the natural and ordinary progress of the injury which he had received in the month of December. The jury would have to say, first of all, whether or not the loss of the plaintiff's eye was to be referred to the blow inflicted upon him by the defendant; and next, if it was, what were the damages which the plaintiff ought to receive. As to the consequences of the blow, they had the statement respecting the wages earned by the plaintiff previous to the assault, but that was all—they had no evidence upon that point. They would therefore apply this knowledge of what the loss of an eye is to the case of a man in the station of life of the plaintiff—a man who lived by his labour, and especially in a trade in the pursuit of which he was as much or more dependent on his eye than his hand. They would take care to look, not to the statement of the plaintiff's counsel, but to the facts which had been proved; and so far as they approved of those facts, they ought to give effect to them. Their verdict should be a moderate and just one, and to be just it must be moderate.

The jury signified a wish to retire; and on their return, after a brief interval, they gave in a verdict for the plaintiff—Damages, £20.

Correspondence.

CORONERS AND MEDICAL WITNESSES— CASE OF SYNNOT V. MILLS.

SIR,—Last week I gave you the particulars of a dispute between Mr. Mills, the Deputy-Coroner, and myself, as to whether a medical man was or was not entitled to his fee of one guinea for medical evidence given at a coroner's inquest. Mr. Mills contended that I was not entitled to one, as I had been summoned on an ordinary witness's summons—he having demanded my attendance and evidence on this irregular form for the express purpose of withholding my fee.

On Wednesday last, the 1st inst., the Judge of the Bloomsbury County Court delivered a long and very explicit judgment on the suit, a short notice of which I saw in last Sunday's *Observer*.

The Judge said that the Act of Parliament was very plain on the subject: it expressly says, that, immediately after an inquest has been held, the coroner shall immediately pay all the incidental expenses, and that he shall be repaid by the county magistrates. The coroner has no discretionary power in the matter. The Judge quoted the judgment delivered by Lord Denman last Trinity Term (which is reported at length in a late number of the *Jurist*). The Judge added, that there was no doubt as to the law of the case, and that he should advise Mr. Mills to take the matter in his own hands, and pay me the fee, otherwise he would be compelled to nonsuit me on a mere legal technicality, as the County Court can only decide in cases of debts by contract, not debts by "tort;" and if Mr. Mills should persist in refusing the fee, I could at once recover it by obtaining a mandamus.

Mr. Mills followed the Judge's advice, and gave me my fee, but I have been at the loss of my costs. I regret that there was not a fuller report of this suit, as it was a point of the greatest importance to the profession, but which now is happily set at rest for ever.—I am, sir,

Your obedient servant,

ROBERT SYNNOT.

76, Cadogan Place.

SUGGESTIONS ON THE INHALATION OF CHLOROFORM VAPOUR.

SIR,—Having employed Chloroform in numerous cases, I have great pleasure in offering additional testimony of its superiority to ether, over which it certainly possesses all the advantages maintained for it by Dr. Simpson. I would also offer one or two

Remarks as to its mode of exhibition. Dr. Simpson advises a handkerchief twisted into a conical form. At most of the metropolitan hospitals, and by many practitioners, a sponge is used. All the various forms of ether-inhalers seem to be employed, and an especial apparatus has now appeared similar to that employed by Mr. Robinson, for the vapour of ether.

Now, sir, the employment of any form of apparatus is certainly attended with inconvenience, is calculated to awaken the fears of the patient, and the use of the mouth-piece by one person after another disagreeable, to say the least. The use of the sponge has vesicated the lips, as at Bartholomew's; is equally unpleasant, in fact disgusting, as being employed for different persons, and, if held close, causes an obstruction to respiration. The method adopted by Dr. Simpson is undoubtedly superior to either—pouring the chloroform upon a clean handkerchief or small napkin (preferable, as being stiffer), it can be rolled into a conical shape, but *leaving an opening at the apex*: held a short distance off at first, after two or three inspirations, the base may be brought so as at once to cover the nose and mouth, and, being adjusted by the fingers of the left hand, will fit the face sufficiently for the air respired to pass through the opening at the apex.

The cleanliness of this method is sufficiently apparent: the attention of the patient is not attracted by the action of the valves; no obstruction is offered to free respiration; the air inspired is at a more favourable temperature; and, when the influence is effected, the operator, not having to place an instrument down, with care simply throws aside the napkin, and is at liberty: no time being lost, he need not so permanently soporize his patient—a matter not unworthy of consideration, particularly in minor operations. Since the introduction of etherization, I have constantly employed ether in painful operations, *if desired by my patient*, but have never had a case occur in which its influence has been so lengthened as in many that have been reported to me. This naturally induces a supposition that a larger quantity is sometimes given, causing more persistent action than there is any occasion for.

Here, then, is at once the *simplest* and the *best* means of exhibiting this agent. All that can be urged against it is simply that a portion of the chloroform must be dissipated also in expiration—a matter not worthy of consideration.—I am, sir, yours, &c.

SAMUEL GARNER.

Dentist to the Metropolitan Free Hospital.

71, Baker Street, Portman Square.
December 6th, 1847.

Medical Intelligence.

THE LATE MR. LISTON. POST-MORTEM EXAMINATION,—CAUSE OF DEATH.

THE thorax was examined, thirty-six hours after death, by Mr. Cadge, in the presence of Sir B. Brodie, Drs. Watson, Latham, and Forbes, and Mr. J. Dalrymple. The lungs were found but slightly collapsed, congested throughout, but otherwise perfectly healthy; the pericardium contained about an ounce of transparent yellowish serum; the heart itself was healthy, saving a slight atheromatous deposit in the mitral and aortic semilunar valves. On removing the subclavian vein and cellular tissue from the arch of the aorta, the cause of death became at once apparent. An aneurism as large as an orange, flattened from before backwards, was seen pressing back the trachea; it arose from the upper part of the arch, close behind the left carotid artery, at the origin of the innominate, which seemed almost to commence from the aneurismal pouch; the communication with the aorta was by a circular opening, as large as a half-crown. On opening the trachea from behind, the mucous membrane was seen to be very dark and congested, and in its front part, where it was firmly connected to the tumor, there were three or four whitish prominences, as large as split peas, situated between the rings; it was at first difficult to understand what these elevations really were, but on slitting up the pouch and removing the fibrinous laminæ, they were drawn from between the ring, leaving the latter quite bare, and the trachea perforated in three or four points; they were, in short, portions of the clot, which half filled the sac of the aneurism. The source of the hæmorrhage and the cause of death were at once explained.—*Lancet*.

THE LATE DR. DIEFFENBACH AND THE OPERATION FOR STRABISMUS.

IN our obituary notice of the late Dr. Dieffenbach, (page 954) we stated, on the authority of a French journal, that the operation for strabismus was first proposed by him. This is an error:—a correspondent well acquainted with the facts, informs us that it was Stromeyer who first proposed the operation, and Dieffenbach who first performed it.

Stromeyer received a prize of 4000 francs for having proposed the operation, and Dieffenbach a prize of the same amount for its performance, from the Académie Royale de Médecine, Paris.

DEFECTS IN THE REGISTRATION RETURNS ON THE CAUSES OF DEATH.

IN a recent number of the *Lancet*, Dr.

Moore, of Hackney, calls the attention of the profession to some serious defects in the mode of registering the causes of death:—

"I am informed by the registrars of deaths that where a medical man refuses to give a certificate of the cause of death, they (the registrars) must obtain the cause of death from the best source they can, and enter it.

"They are not empowered to require the holding of a coroner's inquest, unless they possess information that the death has been caused wilfully.

"They are not required, in their instructions, to inquire on what grounds a medical man refuses to give a certificate.

"If a medical man apprises them that the death has arisen from the unskilful treatment of a druggist, it is not their province to notice the circumstance unless they choose to do so.

"They are in the habit of receiving hundreds of certificates of deaths from druggists, and other unqualified practitioners, and use them, although knowing that such persons are not qualified medical men.

"At least one death in ten is uncertified by a legally-qualified medical man.

"They do not like to have coroners' inquests, as it takes up their time, and is, likewise, objected to by the parochial authorities, on the ground of expense; and they fear to incur the ill-will of those authorities by seeming officiousness.

"The above points of information are derived from some of the registrars of this district, at various times, and in explanation of circumstances that have occurred in my practice, and I consider the facts well worthy of attention and alteration, as they not only show that the causes of death may be, and frequently are, entered erroneously, but that a vast amount of mortality is not to be attributed solely to locality, but partly to the unskilful treatment of disease by illegal and incompetent persons.

"I deduce, from the foregoing statements, that it should be imperative upon the registrar to require the coroner to hold an inquest upon the bodies of all persons who have died, where the survivors are unable to bring a certificate of the cause of death from a qualified medical man, not only as a protection against murder, but against fraud of the cruellest kind, and as a more certain means of ascertaining the cause of death, for statistical and sanitary purposes."

VALUE OF THE EXCRETA OF THE INHABITANTS OF SHEFFIELD.

AMONG the very curious facts now daily brought to light by statistical researches, we must not omit to notice the annual waste which is going on in Sheffield. Mr. Haywood, a professional chemist, and Mr. Lee,

a civil engineer, have ascertained that the produce of the refuse of the 110,000 inhabitants of Sheffield is equivalent to

	Pounds.	Tons.
Potash and soda	1,193,500	or about 537
Lime and magnesia	818,400	. . . 365
Phosphoric acid	1,173,700	. . . 524
Nitrogen	1,693,800	. . . 751

The refuse is estimated to be equal in value to 3140 tons of Peruvian guano, or £30,000! The phosphoric acid alone is worth £10,000! The refuse, we are assured, would keep no less than 100,000 acres of land in a constant state of fertility. This information is very curious, and the calculations may be true,—but a very essential point left unsolved is, how to collect and extract all these useful excreta in a cheap form and without injury to the health of the inhabitants who furnish them. If the plan adopted by the "patent concentrated manure manufacturer"* is to be pursued, or any process similar to it, we think the inhabitants of Sheffield will act wisely in foregoing the profits likely to arise from turning their own refuse into a marketable commodity.

THE CHOLERA PREVENTION ACTS.

IN answer to a question put last week in the House of Commons, whether the Government had any intention of adopting measures similar to those adopted in 1832, under what was commonly called "the Cholera Act,"

Lord MORPETH stated, that the act of 1832, for the prevention, as far as might be possible, of the cholera in England, was still in force; and that act would enable the Government, on the least alarm of the cholera being imminent in this country, to issue proclamations and constitute boards of health. It was now under special consideration whether the proclamations issued on the former occasion could be advantageously altered or modified in any respect, in case that calamity should again visit us.

[His lordship has here committed a strange mistake, as the following letter to the Editor of the Times will show.]

SIR,—It appears by your report of the proceedings in the House of Commons in this morning's paper, that in answer to a question relating to the cholera, Lord Morpeth informed the querist that the acts passed in 1832 relative to that disease were still in force.

Now, as it is just possible that Lord Morpeth may not be so minutely acquainted with the Statutes at Large as it is unfortunately incumbent upon me to be, and as a mistake on this subject might be productive of unfortunate delay in time of need, I venture to trouble you with this note.

* See our last number, p. 1098.

In February, 1832, two acts (to be in force till December, 1832, and from thence till the end of the next session) were passed "for the prevention, as far as may be possible, of the disease called the cholera, or spasmodic or Indian cholera;" 2 William IV., c. 10, for the benefit of England; and c. 11, for Scotland. In the succeeding year those two acts were continued by 3 and 4 William IV., c. 75, to the end of the then next session of Parliament, but having then expired, and never having been revived, will again require the sanction of the Legislature.

Your obedient servant,

A BARRISTER.

Temple, Dec. 10.

INFLUENZA AND ASIATIC CHOLERA.

THERE is by no means that connection between the spreading of influenza and cholera which, from a few isolated observations, some have supposed to exist. The influenza prevailed to a most severe extent throughout the whole of this country in 1837; but, as our readers well know, it was neither preceded nor followed by Asiatic cholera, although, according to some, the latter disease has never left us since its appearance in 1831-2. If, as it has been asserted, influenza paves the way for the Asiatic cholera, and the latter disease has never left the island, how is it that the severe influenza of 1837 was not followed by cholera? The fact that this did not happen, clearly proves that the atmospheric conditions favourable to the spread of influenza, do not necessarily favour the diffusion of cholera.

AGES LIABLE TO ATTACKS OF INFLUENZA.

In the influenza of 1837, Mr. Prichard, of Leamington, remarked, that out of 170 cases the attacks took place in the undermentioned proportions at different ages:—

Cases.

Under 14 years . . .	26—about 1-6th
Between 14 and 65. 119 }	144—about
Above 65 25 }	5-6ths.

PETITIONS IN FAVOUR OF THE MEDICAL REGISTRATION AND MEDICAL LAW AMENDMENT BILL.

THE number of petitions presented to Parliament during the last session amounted to 954, and the signatures to 2024. The numbers are erroneously stated at page 1027 of our last number, the figures having become accidentally misplaced.

THE LATE DR. VALENTINE FLOOD.

WE are informed that a subscription has been commenced for the benefit of the widow and family of Dr. Flood. The subscription is in every way deserving of the support of the profession. Dr. Flood died recently of

fever caught in the discharge of his duties at the Tubrid Hospital.

In addition to his academic and medical degrees, he was a Fellow of the College of Surgeons in Ireland. He was Lecturer on Anatomy and Physiology many years in the Richmond School of Medicine in this city. He afterwards lectured at a private school in London, in which metropolis his talents as an anatomist and physiologist were highly appreciated; but his health becoming delicate, he was advised to try his native air, and, at the recommendation of the Board of Health, was subsequently appointed Physician to the Fever Hospital at Tubrid.

Besides various contributions to the medical periodicals, his memory will be perpetuated by the following works:—1. Treatise on the Brain; 2. Treatise on the Nervous System; 3. Treatise on Hernia; 4. Treatise on the Anatomy of the Arteries. These publications, particularly that on the Arteries, are esteemed standard works by the profession.

RESIGNATION OF THE MEDICAL OFFICERS OF THE MIDDLESEX HOSPITAL.

ON Monday last a special general court of the governors of this charity was held in the board-room, Charles Street, Tottenham Court Road, to take into consideration the case of Mr. E. W. Tuson, one of the surgeons of the institution. Mr. B. B. Cabbell presided. There were also present—the Duke of Cambridge, Sir R. Inglis, M.P., Sir W. Stirling, Sir B. Smith, Sir E. Pearson, General Caufield, Mr. B. Hawes, the Hon. Capt. Maude, R.N., Capt. Darley, the Hon. J. W. Percy, Mr. W. F. A. De-lane, and nearly 100 governors. The business of the day having been opened by the chairman, Mr. Sheddqn, the secretary, read the statement of the weekly board of the circumstances the meeting were called upon to investigate, in which were set forth cases of complaint against Mr. Tuson for having received money for defraying the expenses of pupils, and for not having therewith paid the fees for the lectures in the hospital, whereby the pupils had been obliged to pay the money out of their own pockets a second time; and statements made by Mr. Rowden and Mr. Corfe, co-lecturers with Mr. Tuson, complaining that he had not duly accounted to them for various fees. The statement having been read, the Hon. Capt. Maude addressed the meeting, and moved, "that the meeting confirm the resolution of the weekly board of the 30th of November, by which Mr. Tuson was suspended." Mr. C. Elliott seconded the resolution. Mr. Pro-pert moved an amendment to the effect that, although Mr. Tuson had in his transactions with his private pupils been guilty of conduct in the highest degree censurable, yet

as his duties during the years he had been attached to the hospital had been characterized by skill, assiduity, and great zeal, the meeting did not deem it expedient to force his resignation. Mr. Brewster seconded the amendment, after which several gentlemen addressed the meeting, and several questions were put to Mr. Tuson. The debate resulted in a resolution, put by Mr. Hawes, which was as follows:—"We, the undersigned, feel strongly the importance of waving every individual feeling, for the security of the hospital, and we deem it right to disclaim further contention, and to place our resignation in the hands of the weekly board at the next meeting." This resolution, which was signed by all the surgeons of the establishment, was seconded and carried by the meeting. The officers will offer themselves for re-election, and it will then be for the governors to say whether they will re-elect Mr. Tuson. His Royal Highness the Duke of Cambridge having said a few words expressive of the interest he felt for the good of the hospital, and a vote of thanks having been passed for the chairman, the meeting broke up.

The above report of the proceedings has been taken from the *Times* newspaper, but we are enabled to communicate some other particulars with respect to this meeting and its objects.—A committee was appointed in February last to inquire into the general conduct and management of the hospital. This committee, whose attention, amongst other subjects, was directed to the causes which led to the differences between the medical officers, thought it necessary to conclude their report in the following words:—"Seventhly and lastly. Your Committee have the painful duty to report, that after mature and anxious consideration of the subject, it is, in their opinion, essential to the welfare of the patients in the hospital, to that unanimous action amongst the medical officers, by which alone their duties can be most efficiently performed, and the restoration of the school of medicine and surgery attached to the hospital, that Mr. Tuson, one of the surgeons, should resign."

It might have been supposed that this was a tolerably strong hint, but Mr. Tuson not only refused to retire, but, as we learn, offered no explanation or contradiction of the charges made against him. The new Weekly Board, having made a general inquiry into the merits of the case, and once more without effect urged Mr. Tuson to refute the charges brought against him, resolved to suspend him from his duty. A special meeting was then fixed for the 13th December. No less than eight different charges, involving the alleged misappropriation of fees, and the improper issuing of tickets, were made against Mr. Tuson.

tion of fees, and the improper issuing of tickets, were made against Mr. Tuson.

"The Weekly Board entered into a minute investigation of these charges against Mr. Tuson, which were delivered to him on or about the 19th ultimo; and, on the 23d ultimo, heard the evidence and such statements as he offered in reply thereto; and also met on the 30th ultimo to receive Mr. Tuson's further defence, and the additional papers and documents which Mr. Tuson said he should then be prepared to deliver, but which meeting Mr. Tuson did not attend, either personally or by his friend; the Weekly Board also considered the statement in writing sent by Mr. Tuson as his defence, unaccompanied by any documents or letters, and the verbal and documentary evidence submitted to them; and unanimously arrived at the conclusion, 'that Mr. Tuson has been guilty of gross misconduct, and that further measures are necessary on the subject; and also that the General Court specially convened for the 13th instant, with a view to come to a decision, be recommended to pronounce Mr. Tuson dismissed from the office of Surgeon to the Hospital.'"

The result was as above stated. Mr. Tuson has not been dismissed by a vote of the Governors; but all the medical officers have resigned. They have all, *with the exception of Mr. Tuson*, been requested to exercise the duties of their offices until the day fixed for the election, Thursday the 20th of January. The Governors will then have to make their choice between Mr. Tuson and the other medical officers who have had no charges brought against them.

MANCHESTER MEDICO-ETHICAL ASSOCIATION.

THIS association now consists of seventy-three members, and a considerable addition to the number is anticipated at the first ballot in February next.

The following gentlemen were elected on the 9th inst. officers of the association:—

President.—Dr. Bardsley. *Vice-Presidents*.—Dr. J. L. Bardsley—W. J. Willson, Esq. *Treasurer*.—John Windsor, Esq. *Honorary Secretaries*.—Richard Allen, Esq.—Dr. Aikenhead. *Committee*.—Mr. Dorrington, Manchester—Mr. Noble, Manchester.—Mr. Fawcett, Oldham—Mr. Flint, Stockport—Dr. Howard, Manchester—Mr. Compton, Manchester—Dr. Radford, Manchester—Mr. Robertson, Manchester—Mr. Mellor, Manchester—Dr. H. Browne, Manchester—Mr. Lallemand, Macclesfield—Mr. Southam, Manchester—Mr. Kur, Manchester—Mr. Nursard, Manchester—Mr. S. Barrow, Manchester—Mr. Wood, Ashton-under-Tyne—Mr. Hutchinson, Manchester—Mr. Greaves, Manchester—Dr. Harland, Manchester—Mr. E. Stephens, Manchester.

PREVENTION OF CHOLERA.

DR. ARTHUR FARRE and Mr. Toyabce have been appointed by Government to inspect the various workhouses and infirmaries in the metropolitan parishes, in order to determine the amount of accommodation for pauper patients, in the event of Asiatic cholera breaking out in this city.

THE EDINBURGH INFIRMARY.

The mortality among the patients in this institution, from fever and other causes, is said to be on the increase. In the month of July the number of deaths was 138; in August, 104; in September, 105; in October, 129; and in November, just expired, 170. In October last year there were only 54 deaths, and in November, 55. During the few days that had elapsed in December on Friday last, they had increased to the unprecedented number of 75, being about 11 daily.

ROYAL COLLEGE OF SURGEONS.

GENTLEMEN admitted Members on Dec. 10.—T. L. Gray.—H. Tizard.—J. Levey.—J. Adolphus.—H. Lord.—E. F. Tinsell.

OBITUARY.

DR. WIGAN.

DR. WIGAN, the well-known author of the work, "On the Duality of the Mind," died at his lodgings in Queen Street, Camden Town, on Tuesday the 7th instant. Dr. Wigan had been complaining for some weeks of ill health.

DR. HOLME.

Lately, at Manchester, in his 80th year, Dr. Holme, President of the Literary and Scientific Institution. It is reported that Dr. Holme has bequeathed a legacy of £25,000 to the Medical Department of University College.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	29.82
" " Thermometer	47.9
Self-registering do. max. min.	28.5
" in the Thames water — 45.2 —	43.8

a From 12 observations daily. b Sun.

RAIN, in inches, 0.7: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 51° above the monthly mean (39.8°).

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Dec. 4.

BIRTHS.		DEATHS.		Av. of 5 Ant.	
Males....	696	Males....	1141	Males....	528
Females..	627	Females..	1313	Females..	518
	1323		2454		1046

DEATHS IN DIFFERENT DISTRICTS.

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326) 300

NORTH—St. Marylebone; St. Pancras; Islington; Hackney	(Pop. 366,303) 422
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London	(Pop. 274,759) 530
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar	(Pop. 393,277) 602
SOUTH—St. Saviour; St. Olive; Remondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich	(Pop. 479,469) 600
Total	2454

CAUSES OF DEATH.

ALL CAUSES	2454	Av. of 5 Ant. 1046
SPECIFIED CAUSES	2446	1039
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	638	211
Sporadic Diseases, viz.—		
1. Dropsy, Cancer, &c. of uncertain seat	144	104
2. Brain, Spinal Marrow, Nerves, and Senses	331	157
4. Lungs and other Organs of Respiration	994	333
5. Heart and Bloodvessels	77	34
6. Stomach, Liver, and other Organs of Digestion	113	74
7. Diseases of the Kidneys, &c.	14	9
8. Childbirth, Diseases of the Uterus, &c.	19	14
9. Rheumatism, Diseases of the Bones, Joints, &c.	17	7
10. Skin, Cellular Tissue, &c.	6	2
11. Old Age	165	65
12. Violence, Privation, Cold, and Intemperance	28	29

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	27	Convulsion	70
Measles	89		
Scarlatina	63	Bronchitis	343
Hooping-cough	65	Pneumonia	306
Influenza	196	Phthisis	198
Typhus	122	Dis. of Lungs, &c.	35
Dropsy	27	Teething	23
Sudden deaths	72	Dis. Stomach, &c.	11
		Dis. of Liver, &c.	21
Hydrocephalus	46		
Apoplexy	30	Childbirth	12
Paralysis	40	Dis. of Uterus, &c.	2

REMARKS.—The total number of deaths was 1466 above the weekly autumnal average.

NOTICES TO CORRESPONDENTS.

The absurd notice in the Morning Post respecting the amount of professional incomes, does not require contradiction in a medical journal.

The very great portion of our space occupied this week by the Reports of the Preceding of Societies, has rendered the postponement of several valuable papers absolutely necessary. Among these is a continuation of the Remarks on Cholera, by Dr. Chas. Bell of Manchester.

The Report on the examination of the bodies in the Rideout case, at Bath, will be unintelligible without some account of the facts connected with this wholesale homicide.

We have to acknowledge the receipt of the Guernsey Star from Dr. De Lisle.

Mr. Bealer's paper on Chloroform will have early insertion.

Lectures.

COURSE OF SURGERY,

Delivered in the years 1846 and 1847,

By BRANSBY B. COOPER, F.R.S.

Surgeon, and Lecturer on Surgery at Gay's Hospital.

LECTURE XVII.

MALIGNANT DISEASES OF BONE.

Malignant diathesis—Characteristics of malignant disease in bone—Exostosis—its cause—conversion into osteo-sarcoma—symptoms of the latter—generally attacks cylindrical bones and lower jaw—treatment—cases—not so liable to return as the other malignant diseases of bone.

Medullary sarcoma—usually commences in the cancellated structure of the bones—probably identical with fungus hematodes of the soft parts—Characteristics may be mistaken for aneurism—disposition to return—cases—Melanosis—black colour arising from effusion of blood—malignant character of melanosis—case—rapidity of return—Fibrous sarcoma—not included in the list of cancerous diseases—symptoms—sometimes attacks the bones of the head—case—Scirrhus tumor—rarely occurs, and always as a secondary disease.

Cystiform sarcoma—resemblance to fungoid diseases—Hydatids in bone—difficulty of diagnosis—case—care requisite in extirpating the cyst.

THE diseases which I have already described as incidental to the bones, may arise from mere local causes, and go through all their stages, without any constitutional derangement beyond a mere secondary resulting irritation; but there are diseases depending wholly upon a constitutional deterioration, and these require, therefore, our due consideration.

Under certain circumstances, a mere external injury may set up a common inflammatory action in a bone which soon becomes affected by a malignant disease from the peculiar diathesis of the patient. You would naturally inquire what is meant by a malignant disease, and I acknowledge it is difficult to be correctly defined. There are many diseases which baffle all our efforts for their cure, and are yet not what are technically termed malignant.

A malignant growth has been defined as "the development of an element which has an indefinite tendency to increase until checked by ulceration or slough; that when

removed it is liable to return, and to propagate similar diseases in different parts of the body, through the medium of the absorbents." These conditions depend wholly on constitutional, and not local causes.

Exostosis, as I have already said, usually results from some slight local cause, tending to an increased action of the capillaries of the part affected, and a corresponding fitness of the tissue to receive the additional quantity of blood, which leads to a partial hypertrophy of the bone, whence no harm accrues unless the bony growth interferes with the surrounding tissues. But suppose this primary action to occur in a person with a malignant diathesis, the exostosis becomes converted into a malignant disease, osteo-sarcoma, and the character of the exostosis is at once changed: the adventitious mass is no longer composed of the constituents of healthy bone, but new elements are eliminated from the blood, which are unfitted for the nutrition of the tissues in which they are deposited: malignant disease is consequently established. This peculiar diathesis may be perhaps considered as a constitutional tendency to form compounds in the blood unfitted for the nutrition of the body.

Osteo-sarcoma is a disease which usually commences from the periosteum, and consists of a substance resembling cartilage, interspersed with spiculae of earthy matter. If a section be made of the tumor, it will frequently be found to exhibit numerous irregularly-formed cavities, containing a red-coloured inspissated fluid. These osseous plates intersect the tumor: they are sometimes found to emanate from the cancellated structure of the affected bone, as if originating in the medullary membrane, but they are more frequently found between the periosteum and the bone. Such tumors increase very rapidly, and if they originate in the exterior surface of the bone, they are not attended with much pain, but grow insidiously to a great size, causing little or no inconvenience beyond the interference with the surrounding structures. If, however, the disease commences from the interior of the bone, great pain is experienced until the compact structure of the bone has become absorbed or ulcerated.

An osteo-sarcomatous tumor is firm but somewhat elastic to the touch; when small it is generally spherical, but as it increases in size its surface generally becomes unequal and lobulated.

This disease usually attacks the cylindrical bones and the lower jaw, but rarely the bones of the cranium or spine, which seem to be more disposed to the fungoid or medullary sarcoma.

We know of no cure for this disease; but as it depends upon constitutional deterioration, it is from constitutional remedies alone we can hope for the discovery of an antidote.

Iodine, arsenic, mercury, bark, and every kind of alterative and tonic, have been tried; but in vain. Amputation seems, indeed, to be the only resource, and this operation should be performed so as to remove the whole of the bone which is subject to the disease. For instance, if the disease be in the tibia, and even close to the angle, I should always recommend that the amputation be performed above the knee; for although there does not seem to be the same liability to the return of the disease when attacking bone as in the softer structures, still I feel convinced of the greater safety of always amputating above a joint, so that the bone sawed through may have been perfectly isolated from the diseased bone by the various structures of the intervening articulation, which are all less susceptible to the development of malignant action, than the osseous system.

Before you have decided upon amputation of the limb, you should examine whether or not the disease has been propagated in the course of the absorbents; for if the glands in the groin or axilla have become enlarged, and indicate malignant contamination, it would be cruel and useless to expose the patient to an operation which could avail nothing under such circumstances.

There are numerous preparations, gentlemen, showing osteo-sarcoma in its various stages, and you will find many others in the section of our museum appropriated to diseases of bone; I strongly recommend you carefully to examine them. You have lately had an opportunity of seeing a case in the man who was in Philip Ward, in whom the upper part of the right femur was enlarged to three times its natural size, and this adventitious growth commenced without any assignable cause beyond a slight sprain on attempting to raise a heavy weight; its growth was very rapid, and unattended with pain. But still no one could look in this man's face without observing that he was very much out of health; indeed, he would have been at once pronounced of a malignant diathesis. The tumor was hard, of a rounded form, and seemed as if it overlapped the femur; at one part it was somewhat yielding under pressure, and might be said, indeed, to be slightly elastic. The skin was not discoloured, beyond slight venous congestion and enlarged veins, which could be seen crossing the tumor.

There was no enlargement of the inguinal or lumbar glands, and therefore I recommended the patient to submit to amputation of the limb at the hip-joint, to which he consented at the time, but his courage failed him, and he left the hospital.

In 1834, I was consulted by a young man, 17 years of age, who was the subject of a swelling on the left humerus, which had ac-

quired the size of an orange. It produced little or no pain, but occasioned some interference with the motions of the elbow-joint, obstructing the action of the flexor muscles. The tumor was round, presented an even surface, and was slightly elastic to the touch. I saw this case with Mr. Saunders, of Cheshunt, and I proposed to strip off the periosteum, with the intention of depriving it of nourishment, and leaving it to slough. On exposing the tumor, however, I found it to be almost entirely cartilaginous, and I therefore proceeded to remove it by slicing it off the bone, to which operation its osseous deposits offered but little resistance. The wound was a long time healing, but the patient ultimately recovered; and I have no reason to believe that the tumor ever returned, although the general health of the youth certainly evinced a malignant tendency. There may be some question whether this was not a case of simple exostosis not yet converted into bone; but from the appearance of the cartilage I removed, and of the constitution of the patient, I was induced at the time to consider the disease malignant. I consider osteo-sarcoma less liable to return than any other of the diseases termed malignant, but still I would urge the propriety, whenever amputation is considered necessary, of amputating on the proximal side of a healthy joint, so as not to leave any portion of the bone which had been affected, subject to the liability of a recurrence of the diseased action.

Medullary Sarcoma

more frequently commences in the cancellated structure of the bones, usually attacking the articular extremities, and the spongy bones. It is, in my opinion, the same disease as fungus hæmatodes of the soft parts, and occurs at the earlier periods of life. As this disease commences in the interior of the bone, it is at first extremely painful, but, as its growth is very rapid, it soon makes its way through the bone, and then the patient becomes comparatively easy. In a short time an external tumor appears, at first without discolouration of the skin; which, however, soon becomes inflamed, and ulcerates, when a soft, dark-coloured fungus protrudes, having a great tendency to bleed. The protruding mass is usually lobulated, composed of rounded masses of brain-like matter, which readily break down, and are so highly vascular as to bleed upon the slightest touch. The tumor usually presents points of dark-coloured depositions like portions of coagulated blood, from whence the disease has been termed hæmatoid. At this period the diseased structure increases with great rapidity, and frequently pulsates, from the size of the vessels which supply it. If caustics or any

other means be employed to check its growth, you may perchance diminish its size for a short time, but it returns with increased vigour, and baffles every attempt to remove it.

The pulsation of such tumors is an important fact to be remembered, gentlemen; for I have known this disease more than once mistaken for aneurism, and have been present when the common iliac artery was tied for what was considered to be an aneurism of that vessel, but which afterwards proved to be a fungoid tumor situated in the pelvis; but, even had the disease been recognised, the tying of the artery which supplied the tumor with blood, might have been adopted; for it has been recommended and practised as a means of checking the morbid growth. The result of these cases has, however, only proved the futility of such a view. Sir Astley Cooper and Mr. Lucas both performed this operation some years ago at Guy's Hospital, but ineffectually.

Medullary sarcoma is of the most malignant character, and, when removed, is almost certain to return. If amputation be resorted to, a healthy joint should always, if possible, intervene between the disease and the point at which the amputation is performed; but even this precaution does not insure a successful result.

Case.—Eliz. Cousins, æt. 19, single: was admitted into Guy's Hospital on the 17th of May, 1843, under my care, for an enlargement in the middle third of the right humerus; the swelling was most prominent on the outer and posterior aspect of the arm. Her general aspect was pale, and her frame somewhat emaciated: in short, there was every indication of what is termed a malignant diathesis. Three years before, she had an abscess in the left axilla, which, on being opened, quickly healed. Her friends described her as being quite free from hysteria, but her manner certainly manifested an hysterical tendency. She dated the commencement of the present disease eighteen months previous to her admission into the hospital, and stated that the first symptom was a peculiar gnawing pain, like rheumatism, extending from the shoulder to the right hand. These symptoms continued until about six weeks ago, when the upper arm began to enlarge, more especially about its centre: the pain now increased to a great degree, more especially at night, so that her rest was broken; at the same time, the tumor continued to enlarge until it had acquired the size of an orange.

On examination, the tumor afforded to the touch a firm and uniform hardness, with slight increase of pain when pressed. The bone above and below the swelling did not appear to be implicated in the disease, but she complained of aching pain along the

forearm. The glands in the axilla were slightly enlarged; the integuments covering the swelling were healthy.

After a careful examination of every circumstance connected with the case, I came to the conclusion that it was a malignant disease of the bone, and that the only chance of saving the life of the patient was by amputating the limb at the shoulder-joint, which I considered preferable to sawing through the diseased bone, although there was sufficient space to have allowed of such a procedure.

On the 23d of May I performed the operation, and on the 3d of July she left the hospital, having no other unfavourable symptom than a slight dragging of the left leg.

In the November following she was re-admitted into the hospital for a tumor on the left scapula, having a similar appearance to that on the right arm for which the amputation of the limb had been performed. The tumor gradually increased in size, reaching to the upper part of the dorsal region of the spine. After having experienced for a day or two great pain in the lower extremities, they became paralysed, and she was incapable of voiding her urine; but soon after, incontinence of urine supervened, with torpor of the bowels. She complained of cough, and pain in the right hypochondrium, extending to the pit of the stomach. There was dulness on percussion on the right side of the chest, and she discovered a small hard tumor on the sixth rib of the right side. All her symptoms became aggravated, she became weaker every day, and on the 24th of January, 1844, she died.

Post-mortem examination, forty hours after death.—A large fungoid mass was found occupying a great extent of the right cavity of the chest, and the medullary tumor growing from the left scapula extended to the posterior part of the vertebral column, pressing principally upon the second dorsal vertebra, the arch of which was forced inwards so as to press upon the spinal marrow and produce the symptoms of paralysis which had occurred. The medulla spinalis appeared quite healthy, with the exception of compression at the point above mentioned. Some unforeseen circumstances occurred during the amputation, in consequence of the admission of air into the veins. I do not give the details, because the subject is irrelevant to my present object; but the whole case is published in the 9th volume of the second series of the Med. Chir. Transactions, to which I recommend you to refer.

A Mr. P—, the principal manager in a large brewery, consulted me upon the subject of a tumor on the left leg, which, he said, had baffled every attempt at cure, but, at the same time, it had made no im-

pression on his mind as to impending danger. As soon as I saw the tumor, I suspected its malignant character, finding it composed of distinct lobes of medullary masses, having a great tendency to bleed, growing rapidly, and producing little or no pain. Concomitant with these local symptoms was great constitutional derangement, and a general malignant aspect. My impression at once was that the safest plan would be to amputate the limb above the knee; but, as the patient seemed so perfectly unconscious of any danger from what he considered simply a sore leg, I proposed to him a consultation with another surgeon, and expressed a wish that some of his friends should be with him at the time of our meeting. The late Mr. Tyrrell was the surgeon of his choice, and it was his opinion that it would be advisable to try the effect of the extirpation of the tumor; for, should the disease return, we could then have recourse to amputation of the limb. I conceded to Mr. Tyrrell's views, and, at the earnest desire of the patient, consented to follow the proposed plan. I removed the disease completely from the bone, and we were all much gratified at the rapidity with which the wound healed, by apparently healthy granulations and perfect cicatrization: indeed, so healthy was the general appearance of the limb, that my relative Mr. Tyrrell rather smiled at my recommendation to amputate the limb.

In about three months, however, Mr. P. returned to me with a similar tumor making its way through the cicatrix. I therefore urged upon him the necessity of immediately consenting to the amputation of the leg above the knee; but he said he must take some time to think of it, and would let me know his determination. I warned him against delay, from the fear of the inguinal glands becoming affected, which would render amputation useless.

I, however, heard no more of my patient; but, in about a fortnight after, I was driving past his residence, and saw a surgeon's carriage at his door: the house was shut up, as if death had been busy within; and this indeed proved to be the case: the limb had been amputated, and the patient died three or four days afterwards. Upon a post-mortem examination, fungoid disease was found in several parts of the body.

The characters of this disease are all well defined. The existence of pain as the earliest symptom,—the relief from pain as soon as a tumor appears,—the rapid growth of the swelling, quick ulceration of the skin, lobulated form of the tumor,—its liability to bleed,—frequently pulsating,—and also its great tendency to be propagated in distant parts,—render the diagnosis indisputable.

Melanosis

Is the term given to malignant development in the living structures, when it is characterised by a black colour, and has sometimes been found, if not in the bones themselves, complicated with the diseases of the osseous system. It is, I believe, fungus hæmatodes rendered dark-coloured by the quantity of blood effused from the capillaries of the malignant growth, in consequence of the low vital powers of the constitution of the patient. It has been considered by some pathologists as a disease of the rete mucosum; but just as we find in health inflammation leads to the effusion of lymph, which becomes organised, and that in a bad constitution we have pus effused,—so, under still greater constitutional derangement, a sanious discharge is poured out. Thus in fungus hæmatodes the elements developed differ according to the degree of constitutional deterioration; and in the worst cases this melanotic disposition results, indicating a highly cachectic and malignant diathesis.

A young lady, about 20 years of age, came to town upon a visit from the country, and it was noticed by her sisters that she walked rather lame. On being asked the cause, she said that it was nothing of importance, but that she had a small black spot on the instep of her right foot, and her father with some difficulty persuaded her to take the opinion of a surgeon upon the subject, and brought her to my house. On examining the tumor, I told the father my opinion of the dangerous nature of the disease, but recommended him by all means to consult Sir Benjamin Brodie, as I saw that he could not be induced to believe that so small and painless a spot could be so alarming as I represented it. Sir Benjamin Brodie agreed with me as to the nature of the disease, and I amputated the leg above the ankle-joint, having first examined whether there was any enlargement of the inguinal glands, but which were uncontaminated. The stump very quickly healed, but in a very short time (about a month after the limb had been removed) the patient spoke to me of a swelling having taken place in her groin, and in three weeks from that time this swelling proved fatal. The wax model to which I now draw your attention, gentlemen, is a most perfect representation of the melanotic tumor on the instep, and having once seen it, you can scarcely mistake the disease, should you unfortunately be called upon to treat it in the living subject. I have seen melanotic spots in the pectoral muscles of patients the subjects of malignant diseases of the breast, and in all so affected the malady, if removed, rapidly returned and proved fatal. I may be wrong, but it seems to me that melanosis is to be considered as the

worst form of fungus hæmatodes, and not as a disease *sui generis*.

Fibrous sarcoma.

This disease manifests nearly the same physical conditions as carcinoma, and I am quite sure, gentlemen, that if we saw a fibrous sarcomatous tumor of a bone in a patient who was at the same time the subject of carcinoma, we should at once say, that the affection of the bone was a scirrhus disease; but as it frequently occurs without carcinoma of the soft parts, it is singly, termed a fibrous sarcoma.

The tumor, if cut into, consists of a hard white nucleus, generally attached to the periosteum, and having fibres radiating from its centre: if this swelling be extirpated, it is liable to return in the same situation; but it does not seem so prone to be propagated by the absorbents, which perhaps has led to its being separated from the category of cancerous diseases.

The fibrous tumor has a tendency to increase in its size more rapidly than osteosarcoma. It is attended with darting pain, like scirrhus disease, and it often leads to the absorption of the bone from which it grows; it sometimes attacks the bones of the head.

I was consulted some few years ago by an Irish judge, on account of a tumor on his head. Upon examination, and from its history, I thought it was a common encysted tumor, rendered harder than usual from the pressure of the wig; it was not so moveable as encysted tumors generally are, so that I did not expect it to turn out very readily. Having made an incision through the scalp, and passed my finger into the wound to detach the cyst from the subjacent structures, I was surprised to find the parietal bone absorbed, and the dura mater exposed, from whence the tumor was growing. I detached the disease, and brought the edges of the skin together, and at the same time explained to the patient the nature of the case, so that he might employ due precaution for the defence of the exposed portion of dura mater. The wound readily healed, and the patient perfectly recovered, and lived many years after, without any return of the disease.

These tumors have not a great tendency to return, but nevertheless I think they are to be considered of a malignant character; for indeed scirrhus itself, in some of its forms, will remain dormant for years if not interfered with.

Scirrhus Tumor.

Scirrhus tumor in bone is of rare occurrence, and I believe invariably a secondary disease;—by this I mean that it is concomitant with cancer of some other structure

of the body. When it occurs in bone, it presents a hard, white tubercle, somewhat fibrous, and resembling very much the fibrous sarcoma just described. Here is a preparation of the humerus of a female, who was the subject of scirrhus breast. Sir Astley Cooper extirpated the mamma, and some few months after she broke her arm by merely turning in bed. She survived the accident but a short time; and upon examining the body, this large scirrhus tumor was found in the substance of the humerus. Had this patient not been the subject of cancer of the breast, I have no doubt that this preparation would have been displayed as a specimen of fibrous sarcoma.

In young persons the fungoid diseases more frequently attack bones, and develop themselves primarily in the osseous system, while scirrhus is a much rarer disease in bone, and is invariably a secondary affection. From these facts a diagnosis of the two diseases may be formed.

I have seen several preparations of scirrhus tubercles in bones; but in all, the subjects of them had been affected with scirrhus disease in other parts of the body.

Cystiform Sarcoma.

The description of this disease might perhaps more properly have preceded that of the malignant affections of bone; but I have followed the order of Sir Astley Cooper's arrangement, who nevertheless has, in my opinion, misnamed this malady under the appellation of hydatid disease. Cystiform sarcoma attacks the epiphyses of bones, constituting a number of small cysts, in which a fluid is secreted. It bears a very strong resemblance to fungoid diseases, which are always more or less cystiform, but generally the cysts are less distinct. The form of the vesicles, however, may depend upon the structure of the bone; for as soon as the osseous cells are broken through, the disease puts on every appearance of fungus hæmatodes, and, like it, is very liable to be propagated through the medium of the absorbents to remote parts of the body.

Hydatids in Bone.

Any tumor containing fluid in a cyst seems to have been termed an hydatid tumor, but what I mean to describe under the name of hydatid disease in bone is the development of the living eozoa within the osseous structure. This is truly a rare disease, but it does occur in bone as well as in other structures of the human body. Sir Astley Cooper, Mr. Keate, and Baron Dupuytren, have written on the subject. The diagnosis is extremely difficult, as there are no well-defined symptoms indicating the presence of these animals beyond the

pain and irritation in the affected bone, which might arise, indeed, from any other cause; neither is there any peculiar constitutional sign of their presence upon which a diagnosis can be established. This disease is most likely to be mistaken either for abscess or necrosis, and cases are recorded where bones have been trephined for the purpose of evacuating pus, and hydatids were found to be present.

Mr. Keate has given the history of a case in the 10th Vol. of the *Medico-Chirurgical Transactions*, in which hydatids were removed by surgical operation from the frontal bone, although the nature of the disease was not known until the outer table of the bone was removed with a saw, when the hydatids made their escape and the patient recovered. Sir Astley Cooper had a patient under his care, a lady, who broke her arm from some very trivial accident, and the bone did not unite, great constitutional irritation followed, and she sank under the infliction. On a post-mortem examination, it was found that several hydatids were imbedded in the humerus in a large cavity which had in fact led to the fracture of the bone merely from muscular action. A preparation of this humerus is preserved in the Museum at Guy's Hospital.

M. Cullerier describes a case in which a patient of his was the subject of an indolent tumor on the anterior part of the upper third of the tibia. It was considered steatomatous, but presenting an osseous boundary as if the tumor had sunk into the bone. M. Cullerier applied caustic potash, and on the separation of the slough there issued out a thick matter. On examination of the bottom of the cavity an enlargement of the tibia was detected; actual cautery was had recourse to, which produced the opening of a cavity whence escaped numerous small round bodies of three or four lines in diameter, and one more than an inch in diameter contained several others within itself. These bodies were hydatids of the nature of those termed *acephalocysts*.

In Guy's Museum we have a preparation of a lumbar vertebra which formed part of the wall of an hydatid cavity; the bone has been partly absorbed, and small parasites adhere to it. Prep. 1029³⁰.

Prep. 1258 is another specimen of hydatid tumor in the upper part of the tibia; the medullary structure has been partly absorbed, which induced fragility.

This disease is not to be considered under the category of cystiform tumors, which are merely rounded vesicles containing elements of different characters, depending upon the peculiarity of the constitution affected, and without possessing any independent vitality.

The hydatids are living entozoa, being capable of self-motion, nutrition, and pro-

pagation, but the cause and mode of their development are perfectly unknown.

I have myself found them in the mamma, and once in a tumor in the thigh; in both these cases I experienced very great difficulty in healing the wound after their extirpation, and considerable constitutional derangements marked the peculiarity of the disease, but nothing in the appearance of either of these patients could have led to the suspicion of the nature of their complaint.

A most excellent account of the development, structure, and economy of the *acephalocysts* has been given by Dr. Goodsir in the 15th Volume of the *Transactions of the Royal Society of Edinburgh*.

In the removal of tumors which contain hydatids, great care should be taken to extirpate the whole of those cysts in which they are contained, as the smallest portion if left behind seems to create great disturbance, but I believe with every precaution the wound can never be made to unite by the adhesive process.

TEST OF THE PRESENCE OF ALCOHOL IN CHLOROFORM.

In a communication lately made to the Academy of Medicine, M. Mialhe states as the results of his researches:—

1. That pure chloroform, applied to the skin or mucous membrane, produces simple redness, without canterization or vesication. It acquires, however, caustic properties when mixed with a small quantity of absolute alcohol.

2. That the chloroform used in medical practice, which has caused vesication of the lips or nostrils, with irritation of the bronchial tubes, could not have been pure.

3. That this chloroform contains a certain quantity of anhydrous alcohol. The presence of this liquid in chloroform was suspected by MM. Soubeiran and Gerdy, and it has been demonstrated by analysis. The alcohol may act by combining with and coagulating the albuminous fluids of the body, and thus giving rise to the local effects of irritation.

Hence, before using chloroform vapour in surgical practice, it is indispensably necessary to ascertain whether it be pure. M. Mialhe finds that the following is a very delicate test of the presence of alcohol in chloroform. Place some distilled water in a tube or glass, and drop on it a small quantity of chloroform. The greater part sinks immediately to the bottom of the vessel, owing to its great density (sp. gr. 1.48). A small quantity floats by repulsion, but may be made to fall in small globules by agitation. If the chloroform be pure, it remains transparent at the bottom of the vessel; but if it contain only a small portion of alcohol, the globules acquire a milky opacity.

A COURSE OF
LECTURES ON DENTAL PHYSIO-
LOGY AND SURGERY,

Delivered at the Middlesex Hospital School

By JOHN TOMES, Esq.

Surgeon-Dentist to the Hospital.

LECTURE XVI.

The necessity of mastication either by natural or artificial teeth.—The construction of artificial teeth—the adjustment, the use, and the means to be adopted for their preservation.—Conclusion of the course.

GENTLEMEN,—I promised, before concluding the course, to give you some account of artificial teeth—their construction, their use, and their management. I will now redeem my pledge; but I must be brief, for we have but one lecture at our disposal, and the subject is a large one.

The duration of human life is proportioned to the perfectness or imperfectness with which the various functions that collectively constitute life are performed. These functions are the work of organs on materials submitted to their action: it is, therefore, obviously necessary that before organs can work well, they shall be well formed, and fully endowed with power to work. But it is equally necessary that the materials submitted to them shall in all respects be such as they can readily, and without unusual effort, act upon.

Digestion is one of these functions, and it is one of the first and most important; for without it others can go on but for a while, and if it be deranged others are thrown out as a consequence. Digestion consists in the reduction of the various articles taken as food to a pulaceous mass called chyme, from which the more purified nutriment, chyle, is to be taken.

The reduction of food to chyme is in great part a chemical action: a fluid is furnished by the stomach which dissolves the food.

Substances, irrespective of their relative solubility, are dissolved quickly or slowly in proportion to their degree of permeability or comminution, or, in other words, in proportion to the surface exposed to the action of the solvent. So it happens that a solid morsel swallowed whole may remain in a healthy stomach many hours before it is dissolved, while had the same morsel been crushed or broken up into many pieces, and in that process mixed with saliva and then swallowed, it would have been reduced to pulp in an hour. In the one instance the function of digestion is duly performed, in the other it is retarded. Hence it is of paramount importance that the food, before

it is introduced into the stomach, should be properly crushed, divided, and thus rendered pervious to the gastric juice,—that mastication should be perfect. To effect this purpose we are provided with a special apparatus, with suitable crushers—with teeth. To the dentist is entrusted the care of these important organs, to keep them in repair, and to replace them when lost.

I have told you how to preserve them, how to repair them: I will now tell you how they may be replaced. How, on the one hand, you may preserve the probabilities of life by preserving the organs of mastication; how, on the other, you may regain the lost probabilities by forming efficient substitutes for the lost organs.

But there are other though less important, yet sufficient reasons, why we should use our best endeavours to preserve our natural teeth, and, when lost, to replace them by artificial teeth.

Teeth—and especially front ones, natural or artificial—are necessary to distinct articulation; and we owe it to ourselves, and we owe it to those with whom we converse, that we should be readily and distinctly understood—that our utterance should be perfect.

The absence of teeth deprives the face of much of its character, and especially of its agreeable character; and here, also, we owe it to ourselves, and more especially we owe it to those about us, and also, though in a less degree, to all with whom we meet, to preserve our natural and healthful appearance by all available means. It is not natural for young or middle-aged people to be without teeth, and it is not unnatural for old people to have them. We are in no danger of over-rating the value of the dental apparatus, so long as we consider it as one of the many parts that compose the human system, the well-being of each of which is necessary to the well-being of all the others, and therefore to health and comfort, and through these to longevity.

I will now endeavour to give you some account of the various kinds of artificial teeth, of the principles on which they are severally constructed, and of their applicability. I cannot, however, give you a detailed description of their manufacture; neither would the description be useful if I did. The constructive processes must be seen to be understood, and practised to be learned. Nor can I enter into details on the modifications in form that the peculiarities of individual mouths may require. To do so would occupy many lectures instead of one. On the contrary, I can only sketch briefly the general principles of construction, and in doing so, shall confine my remarks to complete or nearly complete sets, or half-sets, unless it be otherwise stated.

The natural teeth have fangs, which pass through the gums, and are socketed in the jaws. In artificial teeth we must have a corresponding part to the fangs, but here it must be spread over and rest on the gums, and through it, as through the fangs of natural teeth, the pressure of mastication must be communicated to the jaws. This part we will call the *base*, or *foundation*, since from it the crowns of the false teeth must rise. The base is an essential part of all artificial teeth, whether they be few or many; and upon the accuracy with which this fits the gums, will the usefulness of the imposed teeth depend. Indeed, unless it fits tolerably the teeth cannot be worn; and for this obvious reason, that the pressure of mastication will be communicated to those parts only of the gums on which the base bears. If the area of these be small, the parts will be bruised; if they be still smaller they will be cut. The greater the area over which the pressure is diffused, the less will it be felt; the smaller, the more. We all know what would be the consequence if the area were reduced to an edge or a point; yet there are not wanting instances where, from inattention to these simple facts, the bases of false teeth are so badly constructed that the gums are bruised or cut the first time they are worn, and this from the ill-fitting or insufficient size of the base. Hence, in estimating what would be the probable value of artificial teeth, the first consideration will be, whether the base can be made to fit perfectly, and whether of sufficient extent. If both these points can be and are attained, the base will, when pressed on the gums, bear pretty equally over the whole surface it covers, and when so pressed, will squeeze from between itself and the surface of the gums both the saliva and the air, and will then be retained in its position with considerable force by the atmospheric pressure acting on the non-fitting surface only. And further, it may be foretold that if the subsequent stages of construction are successfully conducted, the new will be very useful substitutes for the lost teeth.

The base of artificial teeth is usually formed of sheet-gold, or of dentine—the dentine of the hippopotamus, or of the walrus-tooth—and by the following means:—Bees'-wax, previously softened by immersion in hot water, and well kneaded, and then placed in a horse-shoe shaped tray of suitable size, is introduced into the mouth, and carefully pressed against the gums until they are perfectly imbedded. The tray of wax is then as carefully withdrawn, and if successfully, will present a perfect mould, or counter-cast of the gums. Into this plaster of Paris is poured and allowed to set, after which it is removed from

the wax by softening the latter, and then presents a cast, a fac-simile in size and form, of the gums—supposing, of course, the mould to have been correct. It was usual in my workroom, and I believe in all others, to assume that it was correct, and upon that faith to proceed to construct the teeth from and to fit the plaster cast so obtained, until about two years since, when I had the gratification to discover means whereby the correctness of the cast could be readily tested. Since this time I have always availed myself of the test previous to commencing the teeth.

The means I allude to, with other appliances for teeth-making, formed the subject of a patent in 1846. It consists in the compounding of a material like in composition to extremely hard sealing wax, but which is soft and plastic at the temperature of boiling water, though hard and unyielding at that of the human body. This material, when softened, is moulded on the plaster cast into the shape of the required teeth. Thus we have, at little or no cost of time, a model of the new teeth, on which, by the aid of a little hot water, we can work any required changes, should it on being placed in the mouth need any. And this, of course, will depend on the faithfulness of the cast on which it has been moulded. If the cast be correct the model will fit equally well both the cast and the mouth, but should the cast be faulty the model made on it will not fit the mouth, whereby we discover the error in the cast, and proceed to its correction. The faulty cast is thrown away, and the composition model is slightly softened by immersion in hot water. When in this state it is carefully moulded to the surface of the gum, and then allowed to harden. When hard it is again put in the mouth, and, if found to fit, is used to furnish a plaster cast in the same manner as the bees-wax mould did in the first instance; by which measure we obtain a known *perfect* cast, to which we may make the new teeth without fear of failure. Should gold be chosen for the base, casts in metal, zinc, or brass, are made from the plaster cast, and from these again, counter-casts, or reverses in lead are made, between which and the cast, gold plate is hammered, until it has assumed the form, and fits perfectly to the surface of the cast, and, of course, also to the gums.

If dentine be chosen for the base it is usual to cover the plaster cast with red pigment, and to place upon it a block of dentine in the position it is required to take when fitted. The block will at first touch only at or on two points, and these will be marked by the adhesion of a little of the pigment. The points so indicated are cut away with sculper; the contact is renewed,

and the reddened points again removed. In renewing the contact between the block of dentine and the paint-covered cast, great care should be taken to keep the two in the same relative position as on each preceding occasion. This tedious and somewhat uncertain process is repeated again and again, to the extent of many hundreds of times, till the block is cut to fit the surface of the cast. The superfluous portions are then removed, and the base so made prepared for the reception of the teeth.

In my own workroom the base is carved by a patent machine, which altogether supersedes the hand carving and the pigment. A model of the required teeth is made in the moulding composition, and this is fixed in the machine, and then copied into dentine with much saving of time, and without the possibility of error.

For the invention of this instrument I had the honour to receive a gold medal from the Society of Arts.

The base, so far as its gum-fitting surface is concerned, having been finished, we have next to select the teeth which the base is destined to carry. Teeth used in making artificial teeth are of three kinds: natural teeth, mineral, and carved teeth—that is, teeth carved out of dentine. The latter, when dentine is used for the base, are carved out of the same block in one piece. When natural or mineral teeth are selected they are fixed to the base by pins. In speaking of artificial teeth, dentists divide them into front teeth and side blocks. The front teeth are like, and have the same names as the natural teeth, including the *bicuspid*; while those corresponding to the molar teeth are made in one continuous piece, and are called the side blocks of the piece. I should here tell you that the teeth with their base, whether few or many, are termed a *piece*, an upper or under piece, as they may be for the upper or lower jaw.

The teeth are fixed to the base by pins passing through, or nearly through the centre of each tooth, and soldered to the gold or rivetted through the dentine, according as the base may be composed of the one material or the other.

Should a tooth when in wear come off its pin it may be temporary refixed by wrapping a little floss silk round the pin, and then replacing the tooth.

The piece having been so far finished, the *bite*, or closure of the upper and under teeth, must be adjusted; that is, the teeth of the two jaws must be so adjusted that, on closing the mouth, all meet at the same moment. Should the teeth of one side meet before those of the other side of the mouth, the piece will be displaced at each attempt at mastication; or if the more posterior parts meet before the anterior teeth the

same result would occur. If when the teeth are put in, the error is considerable, the more prominent parts will be readily seen, and may be removed, but when the bite or closure is nearly perfect recourse may be had to pigments. The upper or under teeth, as the case may require, must be covered by the paint, and the points of contact, when marked by closing the mouth, removed by the sculper or file, until, on trial, all parts receive equally the colour from the opposing teeth.

In my own practice I use the composition I have before spoken of. The piece is moulded in this, and the parts corresponding to the side blocks and teeth slightly softened by heat, so that when the mouth is closed, those parts which are too prominent will yield till the proper level is obtained. The bite thus obtained is copied into the artificial teeth.

Artificial teeth are retained in the mouth by three different plans; (1st.) by spiral springs attached by their ends to the pieces of the two jaws, when the set is complete, or when the under teeth are perfect, to caps fitted to these teeth. The springs themselves are made of gold wire, twisted spirally round a small piece of cylindrical steel. They are fixed to the teeth by a swivel or loop, through which a pin passes to the base or to the blocks; while the swivel itself terminates in a piece of wire, which exactly fits into the interior of the spring, into which it is pressed. With this arrangement the springs are readily detached, even by the patient. Should the spring fit too loosely on the swivel, a little floss silk should be wrapt round the latter before pressing it into its place in the spring. And this, too, may be done by the patient, should a spring accidentally leave the swivel.

(2d.) By clasps, or bands, of elastic gold, passing partly round natural teeth. The clasp is attached in a part only of its length to base, the remaining portion is left free, and springs open to receive the tooth. If at any time the clasp does not firmly embrace the tooth, it is only necessary, to make it do so, to bend the free portions towards each other; it will then again take firm hold.

(3d.) By the pressure of the atmosphere. The gum-fitting surface is so accurately fitted to the surface of gum, that the saliva and the air are excluded, whereby the pressure of air acting only on that surface of the teeth exposed to the tongue, holds them in tight contact with the gums.

Teeth on this principle, though the most difficult to construct, are the best kind when well constructed, seeing that they are wholly independent of any remaining natural teeth of the same jaw, and also of those of the opposite jaw.

In advanced age, the alveolar ridge, which supports and gives convexity to the gums, is completely removed, and the roof of the mouth becomes quite flat. In such cases, teeth on the pneumatic principle will not be steady, but, on the contrary, they will glide about just as you have seen two flat metallic surfaces slide readily off each other even by their own weight, though they required considerable force to separate them when applied at a right angle to their surfaces. From these facts you will readily infer, that teeth so made will, if fitted with perfect accuracy, be effective in proportion to the amount of surface presented in the base and to the convexity of the gums.

The amount of atmospheric pressure will, of course, be proportioned to the surface of the base, and the freedom from lateral sliding in proportion to the convexity of the gums, unless there be teeth remaining in the jaw to steady them.

Pneumatic teeth are usually made of dentine, while those retained by clasps commonly have a gold base. Sometimes the base is made of dentine, and fitted round or between remaining natural teeth, and is thus retained. Then, again, teeth may be constructed to be retained by a combination of two of these plans.

Indeed, the combinations and modifications in the construction of artificial teeth are very numerous, and upon the successful adaptation of these to special cases does the skill and usefulness of the dentist depend. No two mouths are exactly alike, and hence no two admit of precisely the same form of teeth; out of this variety arises the difficulty, and the failures of the unskilful, and the success of the skilful.

The base having been completed, the teeth mounted and fixed, and the bite adjusted, the teeth must be given to the patient for wear, who must be directed to return on the following day should the mouth feel sore. If, when your patient returns, you find on inspecting the mouth that the base of the teeth has pressed on one part more than another, and caused redness, the base at that part must be filed or bent away; and these operations of adjustment must be repeated from time to time till the teeth become easy; always taking as your guide the state of the mouth rather than the statement of the patient.

You might at first thought suppose that artificial teeth, when well made, would require no after-adjustment to the mouth; and in many cases they do not,—in others they require but very little: yet, again, they may require a great deal; and for the following reasons:—The base may press equally on all parts, but all parts may not bear pressure equally. Then, again, some parts of the jaw may be covered with a greater

thickness of gum than others. Under pressure the thicker parts of the gum will yield, and leave the thinner to sustain the pressure that should be equally distributed over the whole. The points so pressed on will necessarily become sore, unless the piece be adjusted to relieve them.

The first effect, on putting in a set of artificial teeth, is most unquestionably great discomfort; the mouth feels filled, the speech rendered difficult and indistinct, and mastication impossible: yet, within a fortnight, or three weeks at most, and often within even a week, all those difficulties vanish, and the patient tells you he could not do without the new teeth. Distressing nausea is amongst the occasional early consequence of wearing artificial teeth, but this also subsides with a little patience.

To masticate well with false teeth requires both time and perseverance, the ability being acquired sooner or later in proportion to the aptitude of the individual. But all may acquire it if the teeth be well made, and properly adjusted so that pressure on them does not produce pain.

There are a few persons, however, whose jaws are so formed that sufficient available bearing surface for the base can scarcely be found. There are others, again, in whom the lining membrane of the mouth is so irritable, either naturally, or from habits of intemperance, that the presence of artificial teeth cannot be borne,—or, at least, without great effort. But if the effort be made and continued, and the teeth are good in construction, and well adjusted, success, even in the most difficult cases, will be consequent.

Artificial teeth must be regarded by the wearer as tools, the use of which has to be learned by patient trials. The first time you take up a joiner's plane you cannot work it, nor would you expect to do so without previous practice; so, with artificial teeth, you have no right to expect to masticate effectively with them until by practice you have learned their use. I would recommend that patients before they wear new teeth should carefully examine them in their several parts, and actions, and thus learn how they should be used, and what is to be expected of the teeth and what of themselves in acquiring the art of mastication. If this expedient be adopted, many ill-conceived attempts, and consequent failures productive of disappointment, will be avoided.

It is of great importance that you should know how to preserve false teeth, for in the absence of proper attention they are soon destroyed, and still sooner become offensive. The wearer often seems singularly unconscious of the offensive odour arising from neglected teeth,—not so, however, the by-

stander; he is almost poisoned by the offensive breath of his neighbour. Dentine is used in the construction of most sets of teeth, and this substance you are aware, if neglected, is soon acted on by the saliva, and gradually suffers decomposition: hence arises the stench.

I have told you on several occasions that dentine, when highly polished, resists the solvent action of the saliva. The patient should pay great attention to this point. The surfaces of the teeth should be well brushed with a little precipitated chalk at least twice a day; and after brushing, rubbed with a dry soft towel, or handkerchief, or a piece of wash leather. By these means a beautifully polished surface may be retained. When not in the mouth, the teeth should be kept in a well-stoppered glass jar, filled with two-thirds of spirits of wine, and one-third water. The antiseptic quality of the spirit aids much in preserving the dentine, and moreover keeps them sweet. By great attention, cleaning, and emersion in spirits of wine, when out of use, artificial teeth will last quite as long again as they would if these means were neglected. Artificial teeth cannot be too well kept, but they can very easily, and frequently are, too ill kept. If the base be gold, and the teeth mineral, still they should be well cleaned each day; if the base be gold, and the teeth dentine, there is yet greater need of frequent and careful cleaning. If the base be of dentine, and the teeth natural teeth, the piece will soon be destroyed if cleaning be neglected. Nothing short of never removing artificial teeth from the mouth should be more strongly deprecated than the habit some people have of taking them out only once or twice a week, and at other times cleaning them in the mouth. They cannot be well cleaned when in the mouth, and the surface of the mouth cannot remain healthy when perpetually covered. It must be borne in mind that the gums are covered with epithelium, and that it is the nature of this tissue to be perpetually forming below, while it is suffering perpetual loss from its surface. The scales are rubbed off by the tongue and food. Now if the epithelium be perpetually covered by the base of artificial teeth, the formation will still go on, but the loss from the surface is retarded. The outer epithelial scales may separate, but cannot escape from the surface; they, therefore, accumulate under the base, and there become highly offensive. After a while the mucous membrane inflames, and the development of epithelium is suspended or vitiated; the scales no longer adhere to each other to form a membrane. If the teeth be removed after the mouth has got into this condition, the surface which has been covered will be found red and vascular, and will bleed on the

slightest touch. The fitting surface of the teeth will be coated with a white sebaceous matter highly offensive.

Artificial teeth should not, as a habit, be worn during the night, unless their presence is necessary to the comfort of the patient, or for the preservation of the remaining natural teeth. In either case it is desirable that the patient should have a set for the night—a set with a much smaller base than those used for mastication; and, when practicable, a piece fitted to one jaw only, and extended to the opposite jaw for the gums to close on. All that is required of night-teeth is, that they shall keep the jaws apart. The surface of the gums is naturally uncovered, bathed with saliva, and subject to friction; it is desirable, therefore, that it should be left free eight hours out of the twenty-four; and, if some part must be covered even during night-time, let that be as small as possible.

It will be inquired, at what time of life, and under what circumstances, recourse should be had to artificial teeth, how much may reasonably be expected of them, and how long they will last? Artificial teeth should be adopted whenever the want of teeth is felt, whenever articulation becomes imperfect, or when mastication can no longer be performed by molar teeth. I say molar teeth, because some persons, when the grinders are lost, masticate with the incisor teeth, in which case the incisors are soon worn down, or the upper ones are driven outwards and loosened by the lower front teeth; and thus they, by being forced into use for a purpose for which they are not fitted, become destroyed.

If the wearer be a person of average perseverance and average conformation of mouth, he may expect to have articulation perfectly restored, and mastication of ordinary food rendered effective, by using well-designed and well-made artificial teeth.

Then, as regards the durability of artificial teeth. This will vary with individuals, the variation depending on the state of the saliva, the care with which they are cleaned and kept and used, and upon the material used in their construction; also in a great degree on the manner in which they are made, whether ill or well. A well-made set will last out two ill-made sets. One or two teeth on a gold base will last an indefinite time—ten, fifteen, or twenty years, or they may require renewal in two years, depending on the state of the adjoining natural teeth.

Some people will wear a complete set ten years without renewal, while others wear them down in eighteen months. From three to four years is a fair average wear.

And now, gentlemen, the course is ended.

The allotted time is exhausted, and I fear, too, your patience. The lectures have not been such as I could have wished them, neither as to the matter or the manner. I have, however, done my best to lay before you the principles that should guide your practice; and, if I have been so far successful as to make myself intelligible, and to have excited in you the desire to investigate for yourselves the various subjects embraced in these lectures, my end has been attained. The lectures were composed expressly for the instruction of beginners—not for those already conversant with the subjects treated of. Should they come under the notice of any who are already educated in the profession, I must request them to remember for whom and for what purpose they were written—not for those who have already learned, but for those who have yet to learn.

I may, perhaps, in addressing you, have made use of the facts of others, and, it may be, even of their words, without acknowledgment. If so, I have great occasion for regret—regret both on account of my own ignorance, and regret for the neglect and injustice I have committed. It must not, however, be forgotten, that, in an address to beginners, the less our discourse is burdened with quotations, and the quotation of authorities, the better. And under this I must, if necessary, take shelter.

Original Communications.

A COLLECTION OF FACTS ILLUSTRATIVE OF THE MORBID CONDITIONS OF THE PULMONARY ARTERY, AS BEARING UPON THE TREATMENT OF CARDIAC AND PULMONARY DISEASES.

BY NORMAN CHEVERS, M.D.

[Continued from p. 1014.]

M. MELI has recorded* the case of a mariner, æt. 24, tall, of strong constitution and sanguineous temperament, who had spent three days in a very cold snow-storm in a vessel where he was mostly engaged at the pump. He was violently chilled, and was afterwards attacked with intense fever, attended with much heat, thirst, great headache, sense of constriction in the throat, and great anxiety. The skin was the seat of a

sense of burning, which passed into itching. On the 17th of January (the third day of his disease), he applied to M. Meli, who found the face flushed, the eyes suffused, and the pulse hard and tense. The patient complained of pain in the throat, difficulty of swallowing, and rheumatic pains, which were felt sometimes in the chest, and sometimes in the abdomen†. The patient lost some blood, and laxatives and antimonials were prescribed. Though, on the 18th of January, the patient was better, yet on the 19th all the febrile symptoms were more intense. The skin was in several places red, and in others presented effusions of blood as after beating; the surface was painful, especially in the region of the larger venous trunks; and the slightest touch or pressure aggravated the pain‡. The pulse was very rapid, vibrating, and, in the left arm, diastolic. The patient complained of great thirst, anxiety, throbbing headache, and strong pulsation over the whole body. The blood drawn on the previous day was covered with a thick buffy coat; the serum was very scanty, and the clot was firm and tough. As M. Meli considered, from the quick and violent beating of the arteries, and the redness and tenderness in the course of the veins, that the disease was inflammation of the vessels, he ordered another blood-letting and the use of foxglove. 20th.—The patient was somewhat better, but his night had been rather restless. The symptoms also continued, and on the 21st the extravasations on the skin were more numerous and larger; pure blood was discharged from the throat, and blood and bloody mucus from the bowels. The symptoms persevered, notwithstanding the use of local and general blood-letting and foxglove, with laxatives, until the night between the 29th and 30th, when the patient had a violent attack of shivering. He became very restless and anxious, and was convinced of the near approach of death. Dr. Meli found him with shrunken features and dark blue complexion; the pulse was intermittent, tremulous, and scarcely perceptible; the abdomen was tense and burning; the extremities cold. The patient soon afterwards expired, with violent and agonizing oppression. The body was examined on the two following days. It was emphysematous, and in different parts of the cellular membrane reddish serum was effused, and there were ecchymoses. The nostrils and rectum contained much blood. All the superficial and deep-seated veins of the

* There is no reason to believe that these thoracic and abdominal pains were in reality rheumatic; they were doubtless attendant upon the acute disease of the great blood-vessels which was then in progress.

† A remarkably sensitive condition of the surface of the body has been observed by Dr. Bright in certain cases of acute arteritis.

* Journal of Omodei, and Tiedemann's Von der Verengung und Schliessung der Pulsadern in Krankheiten, and Edinburgh Medical and Surgical Journal, vol. lxxiv. p. 142.

lower extremities were filled with blood, and their walls were hard, thickened, and red-coloured internally. The arteries were in the same state. The trunks of the femoral veins and arteries were highly inflamed, thickened, and solid; and their coats were covered with networks of capillaries filled with blood. Their interiors were lined with layers of adherent plastic lymph, which, in different points, presented consistent purulent matter. The abdominal cavity was filled with much reddish serum, containing blood-clots. The peritoneum was much reddened, and covered with numerous fine red vessels. In several parts of the intestines and mesentery were ecchymosed spots. All the arteries and veins of the abdomen were reddened, and felt hard, as if they had been injected with the usual injection matter; and externally and internally plastic lymph was found effused. In several places they were closed, and united by the effusion of lymph; and in few places did they contain blood. In the interior wall of the aorta, two inches above its division into the iliac arteries, there was found an opening smaller than a lentile, but no laceration was seen in the trunk. The arterial walls were swelled and much thickened, the calibre of the vessel was diminished, and the inner coat was of a brownish red colour. At the point where the celiac artery arises from the aorta there was a circular cording of the vessel, which extended into its division into the gastric, hepatic, and splenic arteries. This consisted of effused plastic lymph, which resembled a false membrane, and could be detached by the handle of the scalpel. The inferior vena cava was in like manner inflamed, much contracted in calibre, and to its inner coat were attached patches of false membrane which resembled valves. The part of the vena cava ascending behind the liver contained purulent matter. The arteries and veins of the mesentery were inflamed, hard, and red, and the vessels of the intestinal mucous membrane were much distended with blood. A similar condition of the blood-vessels of the stomach, liver, spleen, pancreas, kidneys, urinary bladder, and sexual organs, was observed. Their inner membrane was covered with thick fine networks of capillary vessels. The arteries and veins of the upper extremities were greatly inflamed, and quite in the same state as those of the lower. The *pulmonary arteries* and veins were also inflamed, especially the trunks, though less than the arteries and veins of the abdomen. The walls of the bronchial and oesophageal arteries were firmer and thicker than usual, and their inner membranes were inflamed. The coronary arteries were inflamed throughout, as also were the coronary veins; these vessels were externally covered with lymph

which had exuded from the cellular membrane. The walls of the auricles and ventricles, and also the trunks of the arteries and veins, were covered with numerous capillary vessels. The inner surface of the left ventricle was lined with a coating of lymph which stretched over the columnæ carneæ, and partly hung free into the cavity of the ventricle, and the layer extended into the left auricle, and into the beginning of the aorta. The inner surface of the superior cava was lined with coagulated lymph. The inner surface of the throat was reddened, the velum was swelled, the uvula enlarged, and the whole surface was covered with numerous capillary vessels. Some clots of blood adhered to the mucous membrane. The vessels of the brain and its membranes also presented marks of inflammation.

The above case is probably almost unexampled in the extent and severity of the vascular lesions which it presented. It can scarcely be conceived that such an extraordinary amount of disease in structures which are by no means remarkably liable to be attacked with idiopathic inflammation, could have occurred simply as the effect of long-continued exposure to cold in a perfectly healthy individual. It is evident that this patient must have been previously the subject of some grave constitutional defect; such as the vitiated condition of the fluids which precedes the development of acuterheumatic disease, or the faulty state of the blood which attends the worst forms of sea-scurvy. Several of the morbid appearances observed in this case were not dissimilar to those usually met with in extreme instances of scorbutus; and it appears to be far from improbable that, in a young and originally vigorous man, who had been previously exposed to the ordinary causes of scurvy, the endurance of extreme cold and fatigue would excite diseased actions similar to those from which this individual perished. It is evident, however, that, whatever may have been the real origin of his disease, the man's death was immediately due to inflammation of the pulmonary artery, and the consequent obstruction to the circulation through the lungs.

Considerable stress has been laid by authors upon the occurrence of inflammation of the pulmonary artery, and fatal obstruction of its branches in cases of *pneumonia*. It is evidently considered that these lesions have occurred in the relation of cause and effect: my own observation has not led me to adopt this view, but, before arguing the question further, it may be as well to adduce the principal facts upon which the opinion usually held is founded.

M. Cruveilhier speaks of having found clots in the pulmonary artery in some cases

of diffused pneumonia involving one-half or two-thirds of the lung.*

The following case has been expressly referred to as an instance of fatal obstruction of the pulmonary artery occurring as a consequence of pneumonia. It was communicated by M. Richelot to the *Société Médico-Pratique of Paris*, and has been briefly quoted by M. Baron in his valuable essay on obstructions of the Pulmonary Artery, already cited (p. 17). Mr. T., solicitor, *etat.* 38, general health good; had been affected with a slight cough for the last twenty years; the chest, carefully examined, presented nothing extraordinary; hæmoptysis from time to time; dyspnoea on walking quickly. After a long journey on the 1st November 1837, he was seized with violent pain in the epigastrium, which yielded to the application of leeches, and other general remedies. 8th.—Hæmoptysis of pure red blood, dyspnoea; venesection was proposed but refused, and the patient continued his wonted avocations, though advised to refrain; a day or two after he presented all the symptoms of pleuro-pneumonia on the right side. Auscultation and percussion were not performed, from the refusal of the patient. Copious venesection, and the usual remedies, were had recourse to with success: nothing remained but slight dyspnoea. When convalescent, he was all at once attacked with approaching suffocation, and fainted away; having recovered his senses, he indicated the epigastrium as the seat of his suffering. This amelioration did not last long, for the feeling of suffocation returned: about half a pound of blood was drawn with difficulty from the arm; the face became livid; there was violent tenesmus; agitation, followed by prostration and death. *Autopsy, 32 hours after.* The parietes of the thorax presented the dark-red colour peculiar to asphyxia; the pericardium contained about three ounces of a sanguinolent serosity; heart normal, its cavities contained a small quantity of clotted blood; the left lung presented adhesions of old date; about two pounds of reddish serosity in the right pleura; a few fragments of the lung thrown into water floated on the surface; both lungs were of a blackish-red colour posteriorly and inferiorly, but no *engouement* nor hepatization. "The principal branches of the *pulmonary artery* were nearly obliterated by clots of black blood, several of which adhered slightly to the walls of the vessels, were soft in their centre, and surrounded by a portion of a somewhat lighter colour; the blood was perfectly liquid everywhere else." Cranium and abdomen in the normal state". Dr.

Richelot considered that death was produced by syncope, owing to cessation of the circulation caused by the obliteration of the pulmonary artery by clots of blood. We have therefore reason to conclude that the patient died *suddenly*.

Dr. Graves has recorded* the case of a man, *etat.* 60, who came under his care with pneumonia and partial solidification of the right lung, with a complete absence of fever. The disease remained stationary for about three weeks, then there occurred a sudden change for the worse, and the patient died in about 26 hours. On examination it was found that, in addition to the solidification of the lower two-thirds of the right lung (the left lung was entirely free from pneumonic lesion), the pericardium was distended with a very abundant straw-coloured fluid. The membrane was in every way healthy. The heart felt very soft, and lay collapsed; its structure was pale, but otherwise normal. The *pulmonary artery* was occupied by a fibrinous clot, which presented the usual division produced by the branches of that vessel. There were only two valves, and these were coated with a recent deposition of lymph, in some situations almost a quarter of an inch thick. The valves were much thickened and opaque, contrasting in a remarkable manner with those of the aorta, which were quite free from disease. The lining membrane of both the pulmonary artery and the aorta presented its usual appearance, as did also the endocardium. There was some calcareous deposit on the tricuspid and mitral valves, but not more than is frequently observed in subjects of the same age. There was no *anasarca* or effusion into the pleura or abdomen. The hydropericardium and inflammation of the pulmonary valves had not been expected during life. Both had evidently arisen within thirty hours of the patient's death, contemporaneously with the sudden exacerbation of the symptoms.

These cases, together with many of the foregoing instances, certainly prove that acute pulmonary arteritis is likely to occur in association with various inflammatory conditions of the lungs and their appendages, but I do not consider that these or any other cases with which I have met, by any means establish the principle that pneumonia, in any of its forms, is liable to produce acute inflammation of the pulmonary artery. It is true that in some cases where very large portions of the lungs become consolidated, producing death from mechanical obstruction to the pulmonary circulation, branched coagula are found tra-

* Anatomie Pathologique, T. i. Liv. xi. p. 20.

† As cited in the Medical Times, vol. xii. p. 122, May 17th, 1845.

* Dublin Journal, vol. xxii. p. 388, and Clinical Medicine, p. 904 (a few particulars are given in the former account which are not found in the latter).

versing the whole of the ramifications of this vessel, but these clots are always unadherent, and unattended with any of the marks of arteritis, and are evidently merely the effects of slow coagulation of blood in the vessel during the protracted agony of death from gradual suffocation. In none of the cases which have been narrated above was there reason to believe either that the pulmonary obstruction had been sufficient to determine the occurrence of coagulation in the affected vessels, or that inflammation had been propagated from the diseased lung substance to the arterial tissues. It was certainly noticed in Bouillaud's case that one of the inflamed veins passed from the near vicinity of a purulent cavity; but it will be recollected that in one of Cruveilhier's cases of lobular pneumonia,* it was distinctly mentioned that clots did not exist in the small vessels in the near vicinity of consolidated lung. In M. Richelot's case, so far from there being sufficient pulmonary obstruction to account for the extensive coagulation which occurred in the vessels, it does not appear that any portion of the lung was in a state of consolidation, nor is it by any means certain that this patient had ever been the subject of pneumonia at all: in this case the pleuritic effusion was large, but it existed only on the right side, while the vascular obstruction appears to have occurred equally in both lungs. In Dr. Graves' patient, also, the pneumonic consolidation was entirely confined to a part of one of the lungs, while a portion of pulmonary tissue, amply sufficient to admit of a tolerably free circulation, was found in a perfect respirable condition.

It has been argued that pneumonia is essentially dependent upon an inflamed condition of the smaller vessels of the lung. The opinion of Cruveilhier that lobular pneumonia is intimately connected with capillary phlebitis of these organs, may apply in certain instances; and, indeed, in the case of inflammation of any structure, it is, of course, impossible to deny that its capillary vessels are principally involved in the morbid process. Still, I am confident that pulmonary arteritis is by no means a frequent accompaniment of pneumonia, and that it still less frequently exists as a *result* of that lesion. I have examined numerous cases of pneumonia in every stage, and, I believe, in every form of the disease, and have failed to discover either the faintest trace of acute lesion in the wider pulmonary branches, or the slightest appearance of adherent coagula in the smaller ramifications. So generally, indeed, has this been the case, that I am in the habit of suggesting that recent pulmonary apoplexy may be distinguished, at a glance,

from circumscribed red hepatization, by observing that, in the former disease, some of the arteries which pass into the consolidated portion of lung, are always obliterated by coagula; while in the latter the vessels are, as far as I have observed, almost invariably pervious. Particular allusion has been made by Mr. Paget* to the fact, that he has often found the branches of the pulmonary artery blocked up by clots formed during life in those who die of great *œdema of the lungs*.† There can be no doubt that certain of the cases which produce pulmonary œdema, have also a tendency to determine the formation of adherent clots in the pulmonary vessels: thus the two cases‡ which Mr. Paget cites in illustration of his principle, were examples of confirmed morbus Brightii, in which it was probable that the disease in the pulmonary artery, and the œdema of the lungs, were merely the associated results of the condition of renal anasarca from which both patients suffered, if, indeed, the obstruction to the pulmonary vessels was not the older lesion of the two. I have frequently traced out the course of the pulmonary artery in examples of œdema of the lungs arising from various causes, and have been led to conclude that, as a general rule, the vessels remain perfectly free from all traces either of recent inflammation or of fibinous deposit, as far as they can be traced by ordinary dissection. More or less extensive obstruction of branches of this vessel has been observed as a usual attendant of *gangrene of the lung*: it may probably occur either as a consequence or as a cause of that lesion. That complete obliteration of the vessels leading to the sphacelated part is not invariably present in these cases, is, however, proved by the fact, that fatal hæmorrhage has been known to occur from extension of the gangrene to a large pulmonary vessel which had remained unclosed.

The details of the following instance of acute pulmonary arteritis are too incomplete to be of any pathological value; but, as the case appears to afford a rather striking example of this disease, I shall quote it for the benefit of those who may not have access to the work in which it originally appeared.

M. Tiedemann quotes§ the case of a laundress, in whose body, after death, clots were found to extend from the right ventricle into the *pulmonary artery* and its branches, adhering to their walls, while the inner membrane was rough and flocculent, and presented in various parts small whitish specks, to

* In his highly interesting papers on "Obstructions of the Branches of the Pulmonary Artery." *Medico-Chirurgical Transactions*, vols. 27 and 28.

† *Loc. cit.*, p. 167.

‡ Cases 2 and 3.

§ From *L'Esperance*, Mars 15, 1845.

* Second case, p. 838.

which the coagulated blood adhered. In various spots, also, could be detected membranous shreds, which resembled coagulable lymph.

Kreysig and Otto have observed the interiors of the heart and blood-vessels bearing traces of acute inflammation in certain cases of children who have died from the exanthemata, scarlet-fever, measles, and small-pox. In many persons destroyed by the last-mentioned disease, Taunton noticed the traces of arterial inflammation in various stages and degrees. The same phenomena are observed in the arteries in some cases of repelled cutaneous eruptions.* My own observation does not furnish me with any case of the above description in which acute inflammation of the pulmonary artery has been discovered after death. Still, it is probably occasionally present, especially where the patients are cut off rapidly by the sudden occurrence of extensive thoracic inflammation.

MISCELLANEA MEDICA.

By ROBERT DICK, M.D.

PART IV.

[Continued from page 714.]

23. *Inferences deducible from the mouth of man as to the degree in which it is intended he should be carnivorous.*

(SUBJECT CONCLUDED.)

[THOUGH these concluding observations have an important bearing on the general argument, yet they may seem, to some readers, less of a practical nature than the preceding. It is hoped, however, the reader will excuse them: because, as the writer attaches importance to them, he would be induced to bring them out elsewhere, but wishes to avoid seeming to seek any but a professional channel for discussions, in a great measure at least, professional.]

Benjamin Franklin, after informing us that in consequence of having read, when only 16 years of age, a work recommending vegetable diet, and that living on rice, potatoes, bread, raisins, and water, he had found his progress in study, during his leisure hours from his trade of a compositor, "proportioned to that clearness of ideas and quickness of conception which are the fruit of temperance in eating and drinking," goes on afterwards to say: "In the

account of my first voyage from Boston to Philadelphia, I omitted, I believe, a trifling circumstance, which will not perhaps be out of place here. During a calm which stopped us above Block Island, the crew employed themselves in fishing for cod, of which they caught a great number. I had hitherto adhered to my resolution of not eating anything that possessed life, and I considered, on this occasion, agreeably to the maxims of my master Tyron," (the author of the treatise above referred to) "the capture of every fish as a sort of murder, committed without provocation, since these animals had neither done, nor (or?) were capable of doing, the smallest injury to any one that should justify the measure. This mode of reasoning I conceived to be unanswerable. Meanwhile, I had formerly been extremely fond of fish, and when one of these cod was taken out of the frying-pan, I thought its flavour delicious. I hesitated some time between principle and inclination, till at last recollecting, that when the cod had been opened, some small fish were found in its belly, I said to myself, if you eat one another I see no reason why I should not eat you. I accordingly dined on the cod with no small degree of pleasure, and have since continued to eat like the rest of mankind, returning only occasionally to my vegetable plan. How convenient does it prove to be a rational animal, that knows how to find or invent a plausible pretext for whatever it has an inclination to do!"

If my reader is an United-States' citizen, or an admirer of Franklin, he had better stop reading here, for, assuredly, the comments I must make on the preceding narrative will give him no satisfaction. Yet these comments must be made, and in this apparently trifling incident detailed so frigidly by the American philosopher, facts and statements are involved, highly important both as regards the question discussed in this notice, and also Franklin's character and genius.

Franklin, it need not be said, was what is called a Utilitarian in philosophy—one of that school of which a chief organ of our day and of our country is Chambers' Edinburgh Journal. The Utilitarians are those who look at only *one* class of the motives and feelings, the influences, sub-

* Review of Professor Tiedemann's work on Arctation and Closure of Arteries in Disease." Loc. cit., p. 422.

jective and objective, by which man is actuated. They look only at his intellectual moiety. The passions and affections, as *real* and as important a part of human nature as the reason is, are overlooked, suspected, or feared, by the Utilitarians; yet often—and the remark is most important—both individuals and bodies of men are, as it were, instinctively transported by high passions into courses, where reason is passive, and is *anticipated*. After the event, reason justifies the passions; sees that, by an intuitive power conferred by the Deity for wise ends,—by what appears to Utilitarians a chimerical preference of generous to interested motives, individuals and nations sometimes, by a bound as it were, reach positions and ameliorations which reason, experience, and philosophy would have arrived at only tardily, if at all. This power, and this use of the passions, is a *fact* as great and as certain as are the existence and the action of the ratiocinating faculties; but this fact the Utilitarian admits not, or underrates.

In Franklin's character, as in the ethics of Chambers' Journal, there are probity and prudence, but a total want of susceptibility to all lofty motives and emotions. In the autobiographical confession now before us there is something more than a mere negation of generous susceptibilities: there are admissions which indicate a mind low, vulgar, and sensual. Let us prove this. He informs us in the passage quoted above—and he does the same elsewhere—that the use of a vegetable diet had entirely agreed with his health, both of body and mind. He informs us also that, up to the very moment he saw the cod caught, which he was to partake of an hour or two afterwards, he still retained the conviction that the "capture of every fish was a sort of murder." This, if a prejudice at all, was a noble one. His own admission proves that he could indulge it, without the slightest injury to his health, or purse, or convenience,—the only grounds which, after all, can be supposed to justify the slaughter of animals. For what, then, does this man of cool judgment and feeling and boasted temperance, all of a sudden abandon a rule of noble and humane self-denial which for a considerable time had been a subject of reflection

and conviction? Because his gustatory sense was tickled by the smell of cooked cod! Under this heroic temptation, this grand philosopher sacrifices a grand principle! But, forsooth, he had a *reason* for his conduct. Oh, yes; he was "a rational animal," who, as he informs us, "knows how to find or invent a plausible pretext for whatever it has an inclination to do!" And what was the pretext on the present occasion?—the example of one of the most insensate of brutes! The great philosopher, abandoning his human prejudices (if prejudices they are to be called), his long-formed and long-entertained rational convictions, consents to square his conduct and his tastes by those of one of the lowest of animated beings!

But Franklin, though he reasoned on this occasion with all the selfishness of Utilitarian philosophy, did not do so with the usual accuracy of it. He forgot that while the *fish* had no *choice* of its aliment—no *humane* feelings to overcome—he had both! He forgot that he had thriven *well* on vegetable food. And accordingly, instead of furnishing an immortal instance of noble feelings and principles, or, if you will, noble prejudices, given up under cover of an illogical argument, in order to gratify the lowest of his senses, he ought to have imitated the spirit of one who, with a sounder head, had an incalculably warmer and more generous heart than he, and who declared that "if meat make my brother to offend, I will eat no flesh while the world standeth," (1 Corinth. viii., ver. 13), and who, had he felt a tenth part of the scruples that Franklin did, would have acted, in the same circumstances, a different part from him!

Franklin, in the later part of his life, was a martyr to gout. Two inferences are, I think, justifiably deducible from this fact: first, that, though temperate in early life, Franklin had probably acquired habits of undue self-indulgence afterwards; and secondly, that in all likelihood, had he persisted in his early generous abstinence from flesh, he would never have required to have written his Dialogue with the Gout—a work which melancholily illustrates how a man could make an idle jest of a malady which he had not the resolution to conquer.

The last objection to be noticed is this:—It may be urged; why all this tenderness for oxen, sheep, &c., and all this reasoning about the presumable intention of the Deity, founded on the feelings of pity and humanity with which He has gifted us, that we should be regardful of brute life, when He Himself has ordained us to be momentarily the occasion of death to thousands or millions of animalcules in every mouthful of air we inspire, of water we swallow!* The Deity has so arranged our circumstances that we *can avoid* being the causes of death in the one case: we cannot avoid being causes of death in the other. In the case of aerial and aqueous animalcules, we are in the position of carnivorous brutes. We have *no choice left us* but to destroy life. We are therefore guiltless in doing so. It is further to be observed, that in being, in the case of animalcules, the agents of death to innumerable animated beings, we have no feelings of sympathy or pity awakened, and, therefore, have none to repress (which would have been a necessity to be deplored): neither our eyes or ears are wounded by any spectacle of blood, suffering, and death. How different is the case in the violent death of an ox or a sheep! There, death is the result of a *volition* on our part: we are not, as in the case of animalcules, passive, involuntary, necessary agents of destruction.

Then, further, while none of our senses advertise us of the death of animalcules (and, from the fact of His making us thus unconscious, we may justly infer that the Deity neither blames us or means we should blame ourselves for such deaths), both our eyes and ears too painfully announce to us the death of the murdered quadruped or fowl: the terror, the struggle, the convulsion, the effusion of blood, exactly like our own—the last expiration exactly as when man himself renders out his spirit!

Surely there is an important difference in these cases; and we recommend the subject to the reflection of the reader.

The writer would beg leave to add, in conclusion, one or two observations,

* I have here *over-stated* the argument against myself. As in perfectly pure water there are *no* animalcules; so, probably, in air free from vegetable and other miasms there are few or none—*ther.*

which he trusts will be considered but little, if at all, unseasonable. That he regards sporting, in all its varieties—the seeking of *amusement* in the death of animals—as indefensible, he need scarcely observe. That the day will come when this barbarous pastime will be regarded with horror and detestation, he anticipates as surely as he does any other progression in humanity. The melancholy task of destroying animals will be left to butchers, whose *trade it is*; who pursue it from necessity, and who (it is presumed) exercise it without the criminal and corrupting motives and feelings of savage enjoyment by which sportsmen are avowedly stimulated. To the former, therefore, the butchering of animals may be innocent; not so to the latter. Moreover, as the gentleman-amateur sportsman interferes with the trade and gains of his brother of the shambles, the latter has grounds of complaint.

The public taste, in some things, seems at present to be pre-eminently *cruel*: at least, industrious attempts are made to make it so. Not long since, it was a subject of regret that an illustrious personage was made (contrary, no doubt, to her own expectation and wish) the spectator of the slaughter of an otter. Yet a well-known artist has just selected this barbarous scene* for the subject of his pencil, and many others of his paintings embody similar revolting objects and situations. If, in the elaborating of such sickening details, he is callous and apathetic, we little envy him. That he derives any pleasure from working out such repulsive inventions or imitations, we do not permit ourselves to believe.

24. *Absointhum*. — Pliny mentions that a decoction of wormwood was given to the successful charioteer at the public games; but assigns a fanciful reason for the custom. The real reason is supposed to have been that the drug in question was believed to remove the vertigo of the charioteer

* The scene is not, indeed, the same as the one just alluded to, inasmuch as the illustrious personage above referred to is not represented as present. But the death of an otter is exhibited with circumstances of a revolting nature. A man stands in the centre of the piece, holding aloft the poor creature, which writhes in agony round the pike on which it is transfixed. A number of dogs throng around, panting for their prey. Would any man wish his children to study such a gratuitous exhibition of cruelty and suffering?

consequent on the rapid and usually circular movement along the race-course.

25. *No proof from geology that vegetable preceded animal life.*—In that remarkably philosophical work of his old age called *Cosmos*, Humboldt observes: "The oldest transition-strata present us with nothing but cellular-leaved marine plants. It is in the Devonian strata that a few cryptogamic forms of vascular vegetables, calamites, and lycopodaceæ, are first encountered. Nothing seems to testify, as, on theoretical views, it has been assumed, that vegetable life was awakened sooner than animal life on the face of the whole earth, and that this was brought about or determined by that." (*Cosmos*, English edition, 1845, p. 297-8.) This statement seems to overturn much of the theory of the work entitled "*Vestiges of the Creation*."

Bentinck Street, Manchester Square.

CHLOROFORM IN SPASMODIC ASTHMA.

BY BENTHAM CHANDLER, ESQ.

THE following "Case of Spasmodic Asthma treated with Chloroform," may perhaps prove interesting; I therefore forward you the particulars. I have confined myself to a short history of the patient, and the effect produced by the vapour of chloroform.

Mrs. C., æt. 56, has suffered for the last twenty years from asthma of a purely spasmodic character. In the intervals between the attacks she is perfectly well, auscultation affording no evidence of any organic disease. While under the influence of these violent spasmodic seizures, (which sometimes occur after the accession of a slight cold, but often without any assignable cause, and which she describes as if a tight band were drawn across the chest, impeding respiration, together with a sense of constriction immediately below the diaphragm, equally painful and distressing,) the resources of the *Pharmacopœia* have been exhausted in vain for relief. Sulphuric ether, ammonia, assafoetida, valerian, lobelia, inhalation of hot water vapour, carbonate of iron, henbane, morphine, Indian hemp,—all

have been tried without any decided or marked effect on the spasm, which gradually subsides of itself, after a duration of from thirty-six to forty-eight hours; a full bleeding from the arm is the only remedy to which it has hitherto succumbed.

On Monday last, Dec. 6th, this lady having had the prevailing influenza, for which leeches had been applied to the chest, was seized with her old complaint; the pain, exceedingly acute, referred to the chest and epigastrium, darting through the body to the back; a free inspiration could not be taken nor the recumbent posture for a moment endured, but from nine o'clock in the morning of the 6th to half-past twelve o'clock on the 7th, the hours passed with this patient sitting erect in bed, almost gasping for breath, and uttering a low moaning cry, with every now and then loud shrieks from the sense of constriction on the stomach becoming more acute. Having a fortnight previous to this taken sixteen ounces of blood from her, I was very reluctant to bleed again, and resolved to give the chloroform a trial. I accordingly poured half a drachm on a sponge, hollowed to fit the mouth and nostrils, and held it at first close to, but not touching, the face. In less than half a minute she became excited, waving the arms about, and uttering incoherent expressions, accompanied with loud hysterical laughter; her prevailing idea seemed to be that she was "riding on a moonbeam." I then placed the sponge in contact with the face, when the limbs gradually relaxed, the arms dropping on the bed, quivering of the eye-lids and twitching of the muscles of the face took place, and she fell back on the pillow, drawing deep and prolonged inspirations, between each of which, perhaps, eight could be counted. I now withdrew the sponge, opening the curtains to admit air. Respiration gradually became more regular, and she lay without motion, the body well thrown back on the bed, not the slightest vestige of spasm remaining. This state continued until four o'clock, the patient apparently half sleeping, but conscious of what was passing in the room, when she sat up and took some food, describing her sensations as having been exceedingly pleasurable. Shortly afterwards she enjoyed a quiet sleep of

some hours' duration, and the following morning she was quite quiet, no return of spasm, and no ill effect from the inhalation; she is now comparatively well. I tried the vapour of sulphuric ether in this case, some time ago, not only without success, but with much increase of the sufferings of the patient.

Case of "Congestion" in an Infant.

I had attended the child of Mr. M., a fine boy, æt. between three and four months, for pertussis, unaccompanied with any very acute symptom, and from which disease he was nearly recovered, when on the morning of the 9th January, 1846, the child, after passing a somewhat restless night, with little cough, was suddenly seized with great difficulty of breathing, accompanied with stupor, from which he could be only momentarily aroused. On my arrival, I found him with the head thrown back over the nurse's arm; pupils drawn upwards under the superior palpebræ, but sensible to light; surface of body cold and pallid; respiration short, quick and laborious, with occasional cough. The mouth and nostrils expanded; the hands clenched and occasionally raised, as if struggling for breath; some frothy mucus oozing from the corners of the mouth; pulse so small as to be hardly perceptible; mucous râle heard universally over anterior of chest; much protrusion and strong pulsation of anterior fontanelle, accompanied with great intolerance of pressure, evidenced by the restless throwing of the head from side to side: on applying the finger lightly on this spot, and on coughing, the superficial veins of the head became much swollen and beautifully delineated.

On trying to arouse the child, he opened the eyes for a moment with a vacant expression, seemingly not recognising those around him, and again the cornea was slowly drawn upwards till hidden by the superior palpebra; the lids remaining half open.

On inquiry, I found that the mother had taken the previous evening, at bedtime, a considerable quantity of opium, viz. a draught with Tinct. Opii, and shortly after a pill containing solid opium, on account of severe spasmodic pains in the stomach, which had greatly annoyed her both previous and since her accouchment. The

child's bowels had not acted during the night. Thinking that the symptoms might be attributable to the narcotic taken by the parent, I administered an emetic of Vin. Ipecac., and ordered cloths, soaked in vinegar and water, to be applied to the head, and the lower extremities to be kept warm.

The emetic did not excite much vomiting, but acted freely on the bowels, and on my seeing the child in the evening he seemed easier; less stupor, and dyspnœa relieved. The cold to the head had been diligently applied, and I gave directions that it should be continued.

Jan. 10th.—The infant has been less drowsy during the night, occasionally waking up, and I found him sitting in the attendant's arms, looking about intelligently; respiration easy and natural; some cough, and more characteristic of whooping cough than it had been for some time; bowels open; skin cool; tongue tolerably clean and moist; pulse moderate, and no protrusion or visible pulsation of fontanelle. The cold applications were ordered to be discontinued, and, if necessary, the bowels to be moved in the course of the day with the Oleum Ricini. The child to be fed principally from the bottle, and the mother to have the breast drawn twice a day. At the evening visit, the child appeared progressing in every way favourably, and, indeed, there seemed little the matter with him.

11th.—Was sent for at 8 A.M. and informed that, after passing a good night free from every bad symptom, the infant had this morning suddenly fallen back; dyspnœa and stupor again supervened, and I found him in the same state as in the previous attack.

A consultation on the case ensued, and the following powder was ordered.—Calomel, gr. j.; Compound Tragacanth powder, gr. iv., to be taken every three hours. In the evening a warm bath.

12th.—No improvement; the child has lain for the last 24 hours in the same state, with great difficulty of breathing; little nourishment has been taken; cough troublesome.—℞ Hyd. Chlor. gr. j.; Pulv. Jacobi, veri, gr. ss.; Pulv. Tragacanth c. gr. ij. ft. Pulvis, quartâ quâque horâ sumend. The bath to be repeated at

night, and a little *Oleum Ricini* to be taken during the day.

13th.—Much the same; no diminution of urgent symptoms; pulse rapid, but of tolerable strength; respiration seems much impeded by the quantity of mucus collected and oozing from the mouth.—*R. Ext. Lactucæ, gr. viij.; Ammon. Carb. gr. iij.; Mist. Amygdalæ, ʒiiss. M. Capiat. coch. parv. sæpe. Continuans. pulv.* The bath repeated, and a mustard poultice to the chest. I applied the latter myself shortly after the child was taken from the bath, when the breathing seemed much relieved.

14th.—Slightly improved; bowels opened several times; stools of a dark colour; breathing easier; cough troublesome.—Omit the former powders, and substitute the following:—*R. Hyd. c. Cretâ, gr. j.; Pulv. Doveri, gr. ss.; Pulv. Tragacanth. Co. gr. ij. ft. Pulvis, sexta quæque horâ sumend. R. Vin. Ipecac. ʒj.; Ext. Lactucæ, gr. viij.; Mist. Amygdalæ, ʒxj. M. Cap. coch. parv urgente tussè.*

15th.—Dyspœa diminished; the head is no longer thrown back. He appears to recognise persons, and will allow the fontanelle to be gently pressed. Bowels open; stools green; has taken the breast several times.—*Cont. Medicamenta.*

16th.—The symptoms relieved; is generally better.—The powders to be taken every eight hours.

17th.—Much improved; no drowsiness; respiration natural.—Cough disappearing.

18th to 24th.—The child is now convalescent, and all treatment has been discontinued.

On the 11th of February I vaccinated him with success, from which time to the present the child has not had a day's illness.

As before observed, I was at first disposed to regard the symptoms as referrible to the opium taken by the mother,—from the suddenness of the attack,—from the infant not having been exposed to or had any accession of cold,—the absence of all premonitory symptoms, or any violent paroxysms, the child being nearly convalescent,—together with the temporary complete success of the treatment first employed; but on a repetition of the attack without the supposed cause having been in operation, the case was

diagnosed as one of "congestion." Then arose the question as to the propriety of local bleeding: I confess that, seeing the painfully laborious breathing of the child during a period of three days, I was much disposed to have recourse to topical repletion, but it was afterwards determined to trust to mercury, and endeavour to remove the congestion by bringing the system under its influence as quickly as possible; and admirably did it fulfil expectations, as a mitigation of all the symptoms commenced immediately the system became affected by it. The result of this case has made me very cautious in abstracting blood from infants; as I now believe it would have done harm, by weakening the constitutional powers, and thereby rendering the child less able to withstand and cope with the disease. Counter-irritation, however, together with the warm bath, produced marked benefit. We were afraid of repenting the emetic on account of the head symptoms.

The administration of calomel, therefore, until the urgency of the symptoms abated,—the substitution thereupon of the *Hyd. c. Cretâ*, with Dover's powder, together with the *Ext. Lactucæ*, with *Vin. Ipecac.*, for the purpose of subduing the cough, which occasioned much distress, constituted the treatment.

ON THE TREATMENT OF STRANGULATED HERNIA.

(From a Correspondent.)

My attention has just been directed to some observations made in your weekly publication of the 8th instant, by Mr. Allen, of York. I should have noticed them sooner, but the *Gazette* has only yesterday reached me; and, as Mr. A. has called in question the plan of treatment in cases of hernia laid down by the first authorities, I have ventured to offer a few observations, in order to endeavour to make manifest his errors on many points in the paper in question.

Mr. A. states, that "*few writers, and these very briefly, allude to the changes which induce and constitute incarceration*:" he quotes Teale, viz. "Tume-

faction of the protruded parts, rendering them too large to repass the opening by which they have descended, is the immediate cause of strangulation;" and he farther states—"Yet we have not the investigation how this enlargement is affected, or what are the changes when the volume diminishes;" also, "It is evident that the interruption to the circulation caused by the pressure of the neck of the hernial sac, must, according to the degree of stricture, destroy the equilibrium between the arteries and the veins, and cause an accumulation in the protruded part either on the arterial or venous side, the intermediate capillaries or surrounding cellular tissue, or all; but, judging from analogy, the accumulation is most probably on the venous side." And, when speaking of his treatment, he says—"Hence to confound what relieves impeded circulation with what lessens inflammation, is to commit an error and mystify the case, and to confound what reduces the tumefaction with dilatation of the constricted part is sure to be productive of wrong conclusions." Further, "This I conceive to be the great mistake; for, on consulting our best authorities, we hear of bleeding, warm baths, tobacco, &c., as producing relaxation, and this answering the desired end." "I am at issue with the conclusion that the strictured part can be relaxed by such means." He quotes "Lawrence," viz. "The exit of ruptures from the abdomen is by an opening, which is in most cases tendinous, and therefore unyielding." Teale is again quoted—"That the strictures immediately surrounding the seat of constriction perform in most instances a merely passive part, in consequence of their being inelastic, non-contractile, and, I might add, inextensible,"—"therefore I conclude that these remedies do not act by relaxation of the ring;"—"that the solution does not depend on relaxation, but is clearly owing to some process whereby not the ring is enlarged or relaxed, but the tumefaction is lessened, and then enabled to be returned."

So far from writers not alluding to the changes which induce and constitute incarceration, they have been treated of by Sir A. Cooper, who also taught in his lectures that "a hernia is said to be strangulated when it is not only confined within the parts into

which it has descended, but it is so much compressed by the *narrow part* through which it has passed, that the *circulation* in the intestine or omentum is in a *great degree stopped*. Some portion of blood is still capable of being carried to the part by the arteries, but it *cannot be returned* by the *veins*, and the circulation is in a great degree impeded." It is also fully mentioned by Liston in his *Operative Surgery*, p. 448 and following pages. I may here remark that the violent and forcible use of the taxis is by all practical authorities condemned. Mr. A.'s general remarks, in my opinion, are inapplicable to particular kinds of hernia; and therefore, in promulgating them, exceptions ought to have been alluded to. To a certain extent they may be correct when referring to femoral, but much less so in cases of inguinal hernia. It must not be forgotten that in inguinal hernia—an accident peculiarly incidental to males* when it takes the course of the cord, which is generally the case—the stricture is met with in three different situations—viz. 1, at the internal ring, at the mouth of the sac; 2, in the canal itself, about an inch from the external ring; and 3, at the external ring; and this is the order in which their relative frequency occurs. For about one-third of the extent of the inguinal canal, which is about one inch and a half or two inches in length, the protruded portion of intestine or omentum would be covered after its peritoneal investment, and the tubular prolongation of the fascia transversalis, *by the transversalis and internal oblique muscles crossing it*, and, after getting under the lower border of the latter muscle, it receives another covering from the cremaster: it lies upon, first, the fascia transversalis and cord, and then on the conjoined fibres (which have curved round it) of the transversalis and internal oblique; and, as the stricture is but very rarely met with at the *external ring*, it will be evident that the muscular structures above alluded to must materially influence and contribute to the difficulties experienced in the reduction of hernia when situated in the first

* A case of *inguinal hernia* occurred in my practice a few weeks past in the *female*, one on both sides; that on the right side was, after the inhalation of ether, reduced; that on the left side was readily reducible.

two situations, and which practice proves to be almost always the case. I do not mean to infer that these muscular structures form the constricted portion *entirely encircling* the protruded contents of the sac; at the same time, no one will deny that they very greatly tend to aggravate the mischief, and offer, consequently, a most potent barrier to the reduction; and therefore any remedial measures to promote relaxation will most materially aid the efforts of the surgeon in the treatment. I am of opinion that in cases of strangulated hernia the means usually resorted to, viz. taxis, warm baths, bleeding, tobacco, &c., are successful, not simply by relieving the over-distended state of the venous and arterial, as well as the capillary system of the protruded part, but that its return also is facilitated very greatly by the relaxation of the muscular structures in its vicinity. Mr. A. goes on to remark: "Now let us examine the remedy which, by common consent, is considered the most potent—tobacco. This palpably soon reduces the heart's action, and necessarily less blood is sent to the capillaries; besides, like all such medicines, it has a tendency to cause great congestion on the right side of the heart; the venous side of the incarcerated hernia becomes emptied; failing to be again supplied by the arteries, the equilibrium is partially restored: even the taxis itself is not successful on the absurd notion of some that by long and steady pressure you fatigue and overcome muscular contraction." Mr. A.'s plan is, "when the strangulation is such as to resist the efforts of the patient, and a moderate attempt by the taxis, cautiously to apply to the part fomentations about the temperature of the surface, gradually increased as high as the patient can bear, then varied till quite cold, for half an hour, and the parts to be submitted to the same alternations and depressions of temperature."

Even if we admit that the effect of the tobacco is to cause great congestion on the right side of the heart, it by no means follows that the venous side of the incarcerated hernia becomes emptied: indeed, if we look at the direct communication of the venous system of the intestinal canal, through the medium of the portal circulation, with the right side of the heart, the

inference would be that instead of emptying the venous side of the incarcerated intestine, a contrary effect would be the result to that attributed by Mr. A. I can imagine that in diminished arterial action there might be a supply of blood still being conveyed to the incarcerated intestine, which would not get that free exit by the venous system of vessels in consequence of the physical and anatomical difference in the coats of the two: viz, the one being firm, thicker, resisting, and elastic, would not be so readily closed by any pressure made upon it as the other, being soft, yielding, thinner, and inelastic; consequently venous congestion would be the result. I am disposed to think that the cases which are represented by Mr. A.'s method as being relieved, would be also as effectually relieved by the taxis applied regularly, gently, and for a longer period; for, by a continued and well-regulated pressure, you relieve the congestion, and in many instances the contents of the sac can be returned without any difficulty. Fomentations have been long ago laid aside as useless; nor do I fall in with Mr. A.'s views that the exaltation and depression of the temperature of the integuments and subjacent structures would be the least likely to relieve the condition of the incarcerated intestines; and the adoption of these, in my opinion, inefficient means might be attended with danger, and, by standing in the way of other more energetic measures, might operate most injuriously. The circulation in the venous and capillary systems is regulated solely by the contractile power of the heart and arterial system, nor are they influenced by local or atmospherical causes. The action of tobacco appears to be that of a sedative, having its immediate influence on the nerves of organic life, which is especially manifest in the cardiac ganglion presiding over the actions of the heart; nor are its effects confined to the heart alone, but the stomach, liver, and other viscera, participate; nor do I believe that the effect would be simply to produce congestion on the right side of the heart without also causing a like condition of the venous system generally, extending also to the seat of stricture in the incarcerated intestine.

Nottingham, Nov. 1847.

MEDICAL GAZETTE.

FRIDAY, DEC. 24, 1847.

It is with regret we announce that the mortality in the metropolis still continues unabated. It is now so great that the surplus deaths above the autumnal average have been, during the two weeks ending Dec. 11, greater than the total deaths at the same period of the year for the last eight years.

Thus the total deaths registered in London in the fiftieth week of

1840 were	1081
1841	821
1842	994
1843	99
1844	1214
1845	981
1846	1177
1847	2416

being a surplus of 1370; and in the preceding week the surplus was even higher—1408. It is thus proved that there are some specially malignant causes which are operating to render the close of 1847 most fatal to human life.

Great as is this number of deaths in the metropolitan population, it bears but a small proportion to the number who have been attacked by the prevalent epidemic. The fatal effects of influenza have manifested themselves at all ages; and it would appear, so far as the disease itself is concerned, that it has proved fatal in a greater proportion among persons at the adult and advanced periods of life than at the infantile period. Looking, however, to the diseases which may be regarded as the sequelæ of the epidemic,—bronchitis and pneumonia,—the aged have been cut off by the former, and the young by the latter, in a much greater proportion, having regard to the numbers living, than adults. The great

increase in the mortality may be referred chiefly to two classes:—Zymotic and Pulmonary diseases.

	Aut. Aver.	Dec. 4.	Dec. 11.
Zymotic diseases, 211	638	783	
Pulmonary, 333	994	913	

Among zymotic diseases, measles and hooping-cough show a fatality much above the average; but the increase of deaths is found chiefly under the heads of influenza and typhus; and in pulmonary diseases, under bronchitis and pneumonia.

Week ending Dec. 4.

	Under 15.	15 to 60.	Above 60.
Influenza, 38	49	112 = (198)	
Typhus, 53	61	18 = (132)	
Bronchitis, 96	96	151 = (343)	
Pneumonia, 219	56	31 = (306)	

Week ending Dec. 11.

Influenza, 80	113	181 = (374)
Typhus, 61	58	17 = (136)
Bronchitis, 83	83	131 = (299)
Pneumonia, 221	44	29 = (294)

The autumnal average of deaths assigned to influenza is 3; the deaths from this cause in the week ending Dec. 11 were 374. Of typhus the average is 36 to 136 deaths; of bronchitis, 39 to 299 deaths; of pneumonia, 109 to 294 deaths.

We believe that since the commencement of the weekly registration of deaths, so large an amount of mortality has not been known. More than one-half of the increase must, besides, be assigned to causes which it is beyond the reach of man to prevent or remove.*

Our readers will be amused, if not instructed, by the report of an inquest held at Cappamore, elsewhere inserted.† The (would be) medical witness and the coroner were tolerably well-matched. In England, when this functionary declines to call in a medical practitioner to assist him in his

* For a summary of the deaths in the week ending December 18, see page 1130.

† Page 1120.

inquiry, a letter of complaint is written to the *Times*, or some medical journal, and the matter quietly drops. In Ireland, however, the case is different:—the solemn inquiry into the cause of death of a fellow-creature, is, judging by the Cappamore inquest, occasionally enlivened by something more than a wordy struggle for victory between the "people's judge" and the representative of the rights of the medical profession. A medical practitioner forces himself, without even an *ordinary summons*, upon a coroner,—the coroner begins by threatening to have him arrested, calls him a "quack," and ends by collaring him and handing him over to the care of the police! There are so many breaches of propriety, ethics, and law, in the short report of this bellicose inquest, which, it is stated, was held on a Sunday, that we hardly know where to begin in giving our opinion on the proceedings. One inference, however, we cannot avoid drawing,—i. e., that it is not the first time that Coroner Bennett and Dr. Arthur have had a contest over a dead body.

When we consider that a medical practitioner has been treated unjustly by a coroner, we do not hesitate to make the case known to the profession, and to defend the witness. Common justice requires, therefore, that we should animadvert upon a medical practitioner who has been guilty of gross misconduct at an inquest. Has a practitioner a right or any legal power to force his services upon a coroner? Assuredly not. The act which applies to coroners' inquests in Ireland, is the 9 and 10 Vict. c. 37. The 33d section refers to medical witnesses in the following terms:—

"And be it enacted, that from and after the passing of this act, in all cases where any coroner shall hold an inquest upon any dead body, and shall deem the attendance of some medical witness

to be necessary at such inquest, he shall summon as such witness any legally qualified medical practitioner, being at the time in actual practice at or near the place where such death happened."

The selection is hereby left to the coroner; and, as it is not asserted that Dr. Heffernan was not qualified to act under the clause, and we presume that Dr. Arthur is not the *only* medical practitioner resident at or near the place where the death happened, the conduct of the latter was unjustifiable and illegal. He had no right to force himself as a witness in the case, when the coroner had told him that he could do without his evidence, and had actually summoned another medical man. If Dr. Arthur felt himself aggrieved, his duty was to withdraw from the inquiry, and lay a complaint against the coroner. There is no doubt, therefore, that the law is with the coroner; although the language and conduct of this functionary shew that he is very ill fitted for discharging the duties of his office.

Reviews.

Guy's Hospital Reports. Second Series. Edited by GEORGE BARLOW, M.A. & M.D., EDW. COCK, F.R.C.S., EDMUND L. BIRKETT, M.D., and ALFRED POLAND, F.R.C.S. Vol. V. 8vo., pp. 212. Highley, London, 1847.

THE present volume of the "Reports," although not equalling the last in the length and number of its papers, is scarcely inferior to any of its predecessors in the interest and importance of the memoirs which it contains. Each of these is of sufficient value to require a separate notice, which we shall now proceed to give, premising that the duty is a highly gratifying one, as it does not compel us to deal with those stale and common-place details with which, we regret to say, a very large proportion of the medical works of the

present day are superabundantly fraught. The first essay is from the able pen of Dr. Lever, and contains a description of "*Some Disorders of the Nervous System, associated with Pregnancy and Parturition.*" It consists of a series of cases, most of which have occurred under the author's own care, and which he brings forward in illustration of the following facts and principles:—

"1. That pregnancy is occasionally associated with chorea or convulsive movements; with paralysis of various parts of the body, of the extremities, and of the nerves of special sense, and with mania.

"2. That the varying symptoms of such complications may be produced at any period of pregnancy; but when produced, although modified by treatment, are rarely removed during the existence of gravidity.

"3. That the patients in whom these complications exist are women of a highly nervous temperament, of great irritability, or whose constitutional powers have been reduced by some long-continued but serious cause of exhaustion.

"4. That in the treatment of such cases, heroic measures are not to be employed; that the curative means consist in improving the secretions, keeping the bowels free, and administering those medicines and employing that diet which will increase the tone and energy of the nervous system.

"Lastly, that although in most instances the symptoms will continue so long as pregnancy exists, yet in the majority of cases we are not justified in inducing a premature evacuation of the uterine contents."

As the subject is one that has escaped the notice of many of our leading obstetric writers, we shall quote two of the fourteen cases of which this valuable paper is composed.

Chorea commencing early, and continuing to the end of pregnancy.—Mrs. — was married at the age of 19; was short of stature, of fair complexion, but with dark hair and eyes. She had enjoyed good health; her uterine functions had been performed with regularity and without pain; she was of a cheerful disposition; she had a liveliness of manner and a warm-heartedness which made her a general favourite. She was wooed and married within twelve months, and during that period suffered only once or twice from hysteric attacks, which seemed to be produced from some fancied or real impediment to the consummation of her marriage. As might have been expected, conception took place 'ere the torch of Hymen was extinguished.' For the first two months the symptoms of pregnancy presented no special peculiarity; they were

chiefly mechanical, with gastric irritability; but at the commencement of the third month a perceptible alteration took place in this lady's manner; she became irritable and pettish; then convulsive movements were observed about the muscles of the face, and followed in a week by a tossing of the head to and fro. The right arm then became convulsed, then the left, and afterwards, successively, the left and right leg. During the progress of the cure her mode of speech became altered, her sentences were short, she hesitated before giving a reply to a question, and when an answer was obtained, she seemed to shoot it out. The tongue was clean; her bowels acted with regularity; and the range of her pulse did not exceed the natural standard. She continued in the same condition until the close of gestation, when her memory seemed weakened, and fears were aroused that she should become imbecile. Almost every plan of treatment was put into practice without avail; purgatives were given in true Hamiltonian doses; zinc was administered in large quantities; the various preparations of iron were tried one after the other; arsenic, digitalis, colchicum, nux-vomica, bark, quinine, musk, and ammonia, and, lastly, the shower-bath. Electricity was talked of, but not used, lest it might excite premature uterine action. The question of inducing premature labour was also entertained, and, having been duly considered, was discarded, from the belief that there were no pressing symptoms to call for its performance, and that the symptoms entirely depended upon the gravid state of the uterus, and would depart at the termination of pregnancy. At the proper period labour commenced, and the patient was delivered of a living girl, after a tolerably easy and natural labour. When the uterine pains were present the convulsive movements ceased, but in the interval they were most distressing; delivery was succeeded by a long and quiet sleep. The patient was more quiet on waking; the symptoms gradually subsided; and at the end of the month she went to church without a vestige of chorea. The supply of milk was copious, and in seven months she weaned her child. This girl is now nearly seventeen years of age, tall, of slender figure, very quick, rather irritable in temper, and impatient of rebuke. At the age of twelve she suffered from a slight attack of chorea, induced by fright, which was quickly removed, and at the period of removal the catamenia made their appearance, and have since continued with regularity.

Mrs. —, soon after weaning her first child, became again pregnant; symptoms of chorea again manifested themselves, but at an earlier period. They pursued a course very similar to that displayed in her previous pregnancy; but, about the fourth

month, an accidental fright induced an attack of hæmorrhage from the uterus; this was followed by its premature evacuation. Although the large quantity of blood she lost kept her in a state of weakness for a long time, yet, as soon as the gravidity of the uterus was put an end to, the chorea declined, and the patient gradually recovered her strength. She has not since been pregnant, neither has she suffered from chorea. She has good health, her spirits are buoyant, she is full of life and merriment, and contributes most materially to the happiness of her friends. She has had occasional hysterical feelings, though slight in character and evanescent." [pp. 3-4-5.]

We shall also quote the following case, which Dr. Lever adduces in support of the fact that "in some cases we find paralysis of one or more organs of the body, or of the extremities, developing itself during pregnancy, and this may occur at any period."

"*Paralysis with pregnancy.*—Mrs. A—, a dark-complexioned lady, with black hair, consulted me about six years since. She was 26 years of age; had given birth to two children, and had weaned her last child for upwards of twelve months; she had weaned them from the excessive debility occasioned by the long-continued lactation. For many years she had been subject to weighty pains in the head and confusion of ideas; she had never suffered from fits, and had received neither blow nor fall. Her face was pallid; lips pale; pupils of the eyes large; head rather square; forehead low; the posterior part of the head large. A week or two previous to her consulting me she felt a numbness in her right arm, with a diminution of its power; she could not feel so distinctly with that extremity, neither could she pick up a pin if placed upon the table. The mouth is drawn slightly to the right side, and there is a feeling of occasional tingling, and sometimes numbness, in the left thigh, leg, and foot. Her pulse small, 84; her bowels inclined to be constipated; her appetite capricious, and her temper irritable. The urine is of natural colour, and secreted in full quantity. Purgatives with mercurials were first prescribed, to increase and improve the above discharges, which were at fault; and afterwards a pill, composed of one grain of sulphate of iron, one grain of quinine, one of capsicum, one of dilute aloes pill, and one of extr. chamomile, was given three times a day. These she continued with great benefit; her appearance improved; the mouth assumed its regularity; the numbness diminished, and she had more power with her right hand; but she did not lose all the symptoms until her confinement, seven months after I first saw her. Her

labour was easy; she went on well for four months, menstruating every month during lactation, and the symptoms again gradually stole upon her; weaning was ordered; the former medicine was re-assumed; and both she and her husband were advised to live, for a time, a life of celibacy. This was observed for a period, and the lady acquired her previous good looks; but when the injunction was removed, she quickly conceived, and, within a month, shewed all those symptoms which were submitted to my notice on my first introduction: the same means were resorted to, and with similar success. Suffice it to say, that I have now attended this lady in four pregnancies, and with four children, she having borne six; that the symptoms make their appearance soon after pregnancy takes place; that they become modified by treatment, but never removed until after delivery; that the period of their cessation has seemed to depend upon the nature and amount of blood lost during the labour; that for a few months all the symptoms disappear; but when the constitutional powers become weakened by lactation, then they gradually steal on, and are removed by the measures above detailed; taking care, at the same time, that weaning forms an essential part of the treatment. Fear and grief have had the effect of seriously increasing the symptoms in the course of a very brief period.

"This lady's father is above 60 years of age, and has suffered from two attacks of paralysis." (pp. 12-14.)

It does not appear that in any of the cases of this description which Dr. Lever has narrated, there existed the slightest tendency to the occurrence of puerperal mania or convulsions at the time of the patients' delivery. In one or two of the cases, premature expulsion of the ovum occurred, and in two, also, parturition took place earlier than the ninth month. In two instances the labour is described as being lingering; but in the remaining examples the process was natural, and its completion appears usually to have been the signal for the cessation of the nervous symptoms.

[To be continued.]

Medical Portraits.

WE are informed that it is in contemplation to publish a series of lithographic portraits of eminent medical practitioners. We have now before us the first of the series—the portrait of Mr. W. Fergusson, Professor of Surgery at King's College. It is not only well

executed as a work of art, but is, we consider, an excellent likeness,—and will, we doubt not, be highly valued by the friends of that gentleman. We understand that these portraits are to be issued under the superintendence of Mr. Stone, of the Royal College of Surgeons. If they be all as well executed as this specimen, they cannot fail to meet with the extensive support of the profession.

We have received, also, two portraits of another series, published by Mr. Mitchell. These are in lithograph, slightly tinted, and are from the pencil of that man of universal accomplishments, Count D'Orsay. We are unavoidably compelled to institute a comparison between these portraits of the late Mr. Liston and Mr. Guthrie, and that of Mr. Fergusson. Our judgment must be entirely in favour of the latter. The former are profiles, which we consider at all times disadvantageous to a good likeness; and they have that stiffness which is so often met with,—we say it without intending any disparagement,—in the works of amateur artists. But for the name attached to the plate, we should not have been able to recognize any resemblance to either of the eminent surgeons whom they are intended to represent.

The Health of Towns' Magazine. No. 7. Dec., 1847. London: Craddock.

THIS number is devoted to numerous interesting questions connected with the sanitary condition of the metropolis. The general interest taken in the subject of sanitary reform, will render it acceptable to a large number of readers. We are pleased to see that the conductors of the journal have practically adopted a hint which we threw out in a late number of the *MEDICAL GAZETTE*, and have given a plan of the metropolitan districts covered by the "disease mist" in its various shades of density. This plan throws a singular light upon the relative position and extent of the foci of disease in this great city.

Medical Reform. An Address read to the Harveian Society, Oct. 2d, 1847. pp. 18. By THOMAS HODGKIN, M.D. London: Churchill, 1847.

THIS address deserves the attention of all those who are honestly engaged in

endeavouring to reform the profession. The changes proposed by Dr Hodgkin are extensive, and would involve what the Colleges would probably regard as a sacrifice of their independence and control.

"The most important innovation which I have proposed consists in the suggestion of a general State or Government examination, the passing of which should confer the sole legal qualification for practice, and empower the individual to act in any or every department of his profession, either singly or in consultation. Such State-examination should necessarily be preceded by the passing of some academic test; but the academic distinctions, which should be conferred in Surgery as well as Medicine, had better follow than precede the passing of the State-examination. Under the proposed arrangements, the functions of the Colleges of Physicians and Surgeons would be easily defined, with very little alteration of their present state; and the appointment of suitable persons to conduct the State-examination would be readily effected."

We much doubt whether any measure in reference to the medical profession will receive Parliamentary sanction during the present session. This pamphlet must be regarded as an honest and disinterested attempt on the part of the writer, to bring about an amicable settlement of the Medical Reform question.

A Popular Essay on Anæsthetic Agents, &c. By W. H. MORTIMER, Surgeon-Dentist. Pp. 32. London: Highley. 1847.

THIS pamphlet is directed to an examination of the properties of chloroform compared with those of ether vapour. The author, from his own experience, and from collected cases, considers it to be a better and a safer agent for inducing insensibility than ether. The essay contains a reprint of Dr. Simpson's observations and cases, and is dedicated to the public.

An Address delivered in the Theatre of the Meath Hospital, at the Opening of the Session 1847-8. By W. STOKES, M.D. M.R.I.A. Pp. 31. Dublin: Hodges and Smith. 1847.

AN excellent address, in which the attention of the students is particularly directed to the clinical study of fever. The mortality among Irish practitioners from typhus, and the paltry scale of

remuneration awarded for the dangerous services which they are compelled to render, are appropriately introduced. In paying a high compliment to the late Dr. Curran, Dr. Stokes takes the opportunity of laying the facts of this melancholy case before the profession. The address is worthy of the reputation of its author.

Speech of the Count de Montalembert, in the House of Peers of France, the 5th June, 1847, on the subject of Medical Reform. Pp. 32. London: Houston and Stoneman. 1847.

THE French medical reform measure was attacked vigorously by the Count de Montalembert, on account of the centralizing principles on which it was constructed. In the judgment of this nobleman, it placed too much power in the hands of Government, and, in common with other measures, tended to extend an unchecked despotism over the mind, the thought, and sciences of the French nation. The object of the translator in publishing this pamphlet will be best understood by the following quotation from his preface:—

"Every design to alter the laws of the realm should not only be undertaken with the most wary caution, but, if ill-advised, should be timely and earnestly opposed. Intentions to destroy are too often masked under professions of improvement. For this reason I think it useful to call the attention of my countrymen to attempts of this kind among our neighbours, which will prepare us to resist similar projects by parties among ourselves."

Proceedings of Societies.

MANCHESTER PATHOLOGICAL SOCIETY.

Tubercle in Fallopian Tubes, also in Lungs.

Dr. WATTS presented the uterus, together with the Fallopian tubes and ovaries, of an unmarried female, aged 24 years, who, after having long been subject to menorrhagia, ultimately died of phthisis.

The uterus and ovaries were healthy, but the Fallopian tubes were both crammed full of tubercular matter, and distended so as to equal the little finger in size. The tubercular matter principally consisted on the one part of tubercle-corpuscles as they appear in their maturity prior to softening; on the

other part, traces of exudation-matter as seen in false membrane in process of organization were observable in some portions of the mass of tubercle, at various points of the field of the microscope. The coats of the tubes were considerably thickened, but not remarkably congested. Both lungs were infiltrated with tubercle in every lobe, and in the superior lobe of each were numerous cavities. No other organ was diseased.

The patient enjoyed good health until January 1844, when after exposure to cold, at the menstrual period, she was attacked with hæmorrhagia, accompanied with pain and tenderness in the belly, particularly deep in the iliac regions, as also in the calves of the legs and popliteal spaces, an affliction which persisted ever afterwards. Symptoms of hysteria were superadded, and she was never able again to return to her work. Early in summer, 1847, she imprudently tried the hydropathic treatment, and having been enveloped in wet cloths at the commencement of a menstrual period, the flow of menses, otherwise so excessive, suddenly stopped, and she was seized with pulmonary catarrh, which terminated fatally in less than nine months as phthisis.

Dr. Watts, in directing attention to the microscopical appearances of the tubercular matter as found in the fallopian tubes, remarked, that exudation of tubercle is acknowledged to occur frequently in common with exudation of coagulable lymph, and the spots of tubercle met with in false membrane adhering to serous membranes (so familiar to all) exemplify the fact. In such examples, however, false membrane preponderates in amount so greatly over the tubercle, as to leave it doubtful whether the tubercle is or is not a secondary exudation from the bloodvessels of the false membrane. The microscopical appearances of the tubercle in the fallopian tubes in this case exemplify the exudation of coagulable lymph in common with the exudation of tubercular matter, where tubercle on the contrary quickly preponderates in amount over the organized lymph. Here the organized lymph, with its elementary structures, presented itself in excessively minute proportions, spotted amidst the large mass of tubercle; the tubercle could not have been a secondary formation of the organized lymph, any more than this could have been secondary to the formation of the tubercle; the tubercular matter and the coagulable lymph must have been secreted simultaneously and in common by disease equally productive of both morbid elements. The microscopical evidence in this case goes to support the view, that the exudation of tubercle and that of coagulable lymph may be effected by one and the same disease of the organic structure where it occurs by a plastic process, separating a

kind of morbid protein-matter from the blood, and that its assimilation as tubercle or organized lymph depends upon the particular error in respect to vital affinity happening to affect the elements of the morbid product, either prior to or after its escape from the blood-vessels.

Lead from urine, and expectoration of a man affected with painter's colic.

Mr. JAMES OGDEN FLETCHER, through Mr. John Fletcher, presented globules of lead, obtained from the urine of a man, aged 38 years, suffering from painter's colic; and he also detailed the results of an analysis of the expectoration of the same individual, proving the presence of lead in the sputum.

Urine.—One thousand parts of urine evaporated gave 71.5 of solid residue; this, after incineration, yielded 13.5 salts. A stream of sulphuretted hydrogen passed through the aqueous solution of these salts, threw down sulphuret of lead in quantity sufficient to afford three and a half grains of metallic lead. In this solution, likewise, prussiate of potash and infusion of galls indicated the presence of peroxide of iron.

Sputum.—One thousand parts of expectorated matters left, after calcination, 9 of salts. A stream of sulphuretted hydrogen passed through the aqueous solution of these salts, precipitated sulphuret of lead. This was re-dissolved by dilute nitric acid, and tested by iodide of potassium, bi-chromate of potash, and sulphuretted hydrogen, which proved satisfactorily the presence of lead. Prussiate of potash threw down a blue precipitate, indicating the presence of iron, which was further proved by other re-agents.

The patient for several years had suffered an annual attack of lead colic, and with the three last attacks had the dropped hand. He worked in a lead-mill, and was engaged in the process of "flattening," in which white lead dissolved in naphtha is plentifully used. On this occasion the colic came on suddenly; the paralysis was considerable; and the blue line on the gums strongly marked.

A subsequent analysis, made two weeks afterwards, when the paralysis was less, and the blue line on the gums less strongly marked, showed a diminution in the quantity of metallic lead in the urine, one-fourth.

Congenital occlusion of the vagina; successful operation, and subsequent pregnancy.

Mr. DOMVILLE produced drawings to illustrate a case of congenital occlusion of the vagina in a young woman aged 19 years, upon whom an operation had been successfully performed, and by which thirty-three ounces of retained catamenial fluid had been withdrawn. A carefully conducted incision carried to the depth of an inch,

brought the *cul-de-sac* of the upper portion of the vagina into view, which being punctured with a trocar, allowed the exit of the pent-up secretion. Further dilatation was effected by wax bougies, &c.

After an interval of six years, this woman married, and bore a child, of which she was delivered at the full period. Mr. Dumville had occasion to divide a rigid unyielding band, before the head could pass the os externum. The patient recovered perfectly.

Artificial Anus at Umbilicus.

Mr. Dumville presented the small intestines of a little boy 2 years old, which were matted together by adhesive inflammation, and which were perforated by four large ulcerations. These ulcers communicated with a cavity, from which three ounces of ill-conditioned pus had been discharged at the umbilicus. One fold of intestine was completely dissevered by ulceration. Extensive tuberculation was found both in the thoracic and abdominal viscera.

The child appeared to enjoy good health until twenty months old, when he became fickle in temper, capricious in appetite, and weakly in body. The bowels became irregular in action, now constipated, and now relaxed, whilst the evacuations varied in colour and consistency.

In the July of this year, the abdomen grew tumid and tender to the touch; in August, these symptoms were augmented in intensity; and in addition, the umbilicus became protruded and inflamed. This was followed by abscess, which burst in the middle of September, and gave exit to three ounces of grumous ill-conditioned pus. After two days, faeculent matter oozed through the aperture at the umbilicus. For fourteen days he passed an occasional motion through the rectum, and then the whole of the faeces were discharged through the artificial anus at the umbilicus.

A diarrhoea of two weeks' duration ceased when the abscess at the umbilicus was discharged. The child died on the 24th of October.

Dissecting Aneurism of Thoracic Aorta—Sudden Death.

Mr. FARR presented the heart and thoracic aorta of a man 88 years of age, who followed the occupation of a sawyer until four years ago, and who had never at any period of his life suffered from severe illness, nor had ailments that prevented him following manual labour. He was suddenly seized with pain between the shoulders, followed by syncope and death in five minutes.

The heart was found free from disease, either in the muscular walls or at the valves, except a little atheroma on the semi-lunar

valves, that did not interfere with the correct performance of their function.

The whole thoracic aorta was atheromatous and thickened. At about half an inch below the origin of the left subclavian artery the aorta was rent across in the form of a triangular flap, each of whose sides measured about seven lines in length. This tearing of the vessel was through the internal and middle coat, and through the intervening atheromatous layer. The outer coat was dissected nearly through the whole circumference of the aorta to the length of four inches, and it was torn through for the space of three inches in a longitudinal direction, beginning at the subclavian artery, and following the convexity of the aortic arch downwards.

The escape of blood was into the left pleural sac, and to the extent of two pints.

Soft Cancer of both Ovaries; excessive growth of Cancer within the Oviducts; Secondary Cancer of Glands and Fat in the Recto-vaginal Septum; Secondary Cancer in Liver and Lungs.

Dr. RENAUD presented the uterus and appendages of a woman *set.* 45 years. The left ovary was enlarged to the size of a kidney, and nodulated with cancer tubers: it also contained two cysts, filled with grumous blood and disintegrated cancer matter: the one as large as an orange; the second about the size and appearance of a garden plum.

The right ovary was completely disorganised, and had undergone the same metamorphosis as its fellow, but in a less degree. Each oviduct was coiled around the corresponding ovary, and inseparably united to it by cancer growths at the free extremity.

The left oviduct measured eighteen inches in length, and two inches in diameter at its widest part. It very much resembled an inordinately distended small intestine, as it lay in folds beneath and around the uterus, and partially obscured the ovary. The soft cancer was closely impacted in the lower end of the tube, where it was attached to the ovary. When traced upwards towards the uterus, the cancer assumed the form of button-like nodules, which represented so many foci of increase. At the distance of one inch from the uterus, the oviduct remained of its normal calibre, but with hypertrophied walls, which became lost in the body of the uterus.

The right oviduct was a repetition of the left, but in a less degree. It measured ten inches in length, and one and three-quarters in the greatest diameter.

The uterus was a little hypertrophied. Sections of it discovered none of the ordinary appearances of cancer, although during life the os was too unyielding to be quite

natural: its colour and unmistakeable texture remained unchanged.

The glands and fat in the recto-vaginal septum were likewise cancerous, through contact, perhaps, with the ovaries and ducts. Patches of secondary cancer existed on the surfaces of the liver and lungs.

Judging from the morbid appearances, it would seem that the disease first arose in degeneration of the ovaries; that the oviducts were next united to them by bands of lymph, the sequences of inflammatory irritation; that the cancer had then spread to them in the usual manner: viz. by contact of surfaces, the oviducts having in the meanwhile become subject to dropsy, in amount sufficient to distend their otherwise narrow passages.

This view of the case being taken, it seems the less remarkable that the uterus should have so completely escaped, it being recollected that the last inch of the ducts remained unchanged.

The woman, during life, complained of all the symptoms incident to cancer of the uterine organs, but there were not any diagnostic peculiarities of interest to be recorded.

Correspondence.

ASPHYXIA AND CONVULSIONS UNDER THE INFLUENCE OF CHLOROFORM.

A YOUNG lady, *setat.* 27, who has for the last three years been the subject of severe neuralgic affection of the left side of the head and face, applied to me on the 11th inst. to extract one of her molar teeth of the upper jaw of the same side under the influence of chloroform. I accordingly moistened a sponge with one drachm of "Hooper's Preparation," covering it over with a fold of lint, and at first held it for a short time at a little distance from the mouth and nostrils, and I then applied it closely over them both for rather more than two minutes without producing the desired effect. During this period the pupils of the eyes were alternately dilating and contracting, but the pulse was only slightly accelerated; and she expressed two or three times her desire that more chloroform should be used. I, therefore, finding there was no tendency to the soporific state, added from twenty to thirty drops more upon the sponge, which, in two or three seconds, produced a rigid state of the arms and legs, with slight convulsions of the abdominal muscles. The pupils of the eyes soon became dilated to their utmost extent, and one of the most alarming states of asphyxia followed, which continued for one minute at least; the eyelids were fixed

widely apart; the mouth open; and the countenance deadly pale, with a dark livid hue around the lips, altogether indicating the most death-like appearance that I ever witnessed. My partner, Mr. Garrard, who was present, immediately opened the window of the room, and then brought a bottle of the strong Liq. Ammon., which was the nearest restorative at hand, and held it to the nostrils, when, in a second or two, one deep inspiration took place, which was shortly followed by another; at this moment the face was instantaneously suffused with the brightest crimson, attended with the most rapid reaction of the pulse, and the patient apparently fell into a calm sleep. I now proceeded to extract her tooth, but before I could remove the instrument with the tooth from her mouth, the jaws became so firmly fixed upon it, that it was impossible to remove it for two or three minutes, during which state, the arms, the legs, and the whole body, were in one continued state of the most distorted convulsions. With the greatest difficulty we depressed the lower jaw, and removed the instrument and tooth, the convulsions (though not so violent) continuing for five or six minutes longer, when she became half-conscious, and muttered "more, more, or I cannot have my tooth out." She continued in this state, more or less, for another half hour, when she was attacked with the most excruciating pain at the top of the head, where there was much heat, and to which I applied linen rags dipped in sulphuric ether for twenty minutes, which removed the heat, and considerably abated the pain; she then reclined upon a couch for an hour and a half, and arose quite comfortable, and went home into the country. I called upon her the following day, and she only complained of great lassitude, as well as much soreness of her whole frame. She had had a pretty good night, and was in excellent spirits, and declared she would undergo the inhalation again if she required it. She described the feelings in her head in the first instance (under the influence of the inhalation) to the noise of a steam-packet just starting from her moorings, and afterwards her sensations to have been most heavenly.

I also tried the chloroform on the 4th inst. upon a strong agricultural lad for erythema. I put one drachm of the same preparation upon a sponge, and applied it with the same caution as in the preceding case, and in one minute the lad was in a deep sleep. I then divided the nail with a strong pair of scissors, and during the time I was extracting the separated portion with the forceps, both legs were drawn up to the body by one violent convulsive action: consciousness returned in another minute: he had felt no pain, nor was he aware that the

nail was removed, but he complained of headache, and sickness, and very soon vomited freely.

On Friday, Dec. 10, I witnessed an operation for stone upon an old man, *setat.* 77, performed in the presence of several professional gentlemen, where the chloroform in the quantity of one drachm and a half, at least, was used upon a sponge covered with a silk handkerchief, and applied in a similar manner as in my own two cases. In two minutes the poor fellow was under its influence, but for five or six minutes, or even more, although bound hands and feet, the convulsive action of his arms and legs was so violent, that it was with the utmost difficulty that two or three gentlemen with myself, who were holding them, could keep him steady upon the table until the operation was finished. In this case, upon the return of consciousness, the patient was surprised to find the stone was extracted, and he declared he had not felt that he had been cut. These are the only three cases in which I have witnessed the effects of the chloroform, and I must candidly confess that I have not been struck with its superiority over ether, under the influence of which I have performed many of the principal operations in surgery, as well as having seen many capital operations in town and in the country by other surgeons, all of which were unattended by any of the convulsive effects and alarming symptoms of the chloroform.—I am, sir,

Your obedient servant,

JOHN REALES.

Halesworth, Suffolk, Dec. 14, 1847.

PHYSIOLOGICAL PROBLEMS.

"Think wrongly if you please, but in all cases think for yourself."—LESSING.

1. Do the materials of which the blood is composed, the food and drink, pass from the alimentary tube through the lacteals, mesenteric glands, and thoracic duct, into the left subclavian vein? Or does the food only take that course; and is the drink absorbed by the radicles of the gastro-intestinal or mesenteric veins, and then transmitted by those veins into the vessel which takes the blood to the liver? Or are both the drink and the food, or the fluids and the fluidified or digested solids, absorbed by the gastro-intestinal capillaries, and then transmitted by the gastro-intestinal or mesenteric veins into the vessel which takes the blood to the liver, and which vessel consists of the splenic vein and its roots and the portal vein and its branches?

2. Are there, as Harvey taught, only *two* vascular systems, a lesser or pulmonic, and a greater or systemic? Or are there *three* vascular systems,—an hepatic, a pulmonic,

and a systemic; each system consisting of an afferent vessel, a set of capillary or perferent vessels, and a set of efferent vessels?

3. There are no less than nine organs which have no excretory ducts, and which, with the unimportant exceptions of nerves entering them, and lymph and lymphatics passing out of them, have nothing passing either into or out of them but blood and blood-vessels. These nine organs are the heart, the spleen, the thyroid gland, the pituitary gland, the pineal gland, the thymus, the placenta, and the renal capsules. Is the heart the only one of all these organs that is subservient to the motion of the blood? Or is every one of the eight others, as well as each half of the heart, part of a vessel, or of a set of vessels, the use of which is either to generate, accelerate, or retard motion of blood? If so, what organs are parts of vessels which *generate* motion of blood? what organs are parts of vessels which *accelerate* motion of blood? and which organ is part of vessels which *retard* motion of blood?

J. J.

Dec. 1st, 1847.

CHEMICAL PROPERTIES OF CHLOROFORM.

BY ALFRED S. TAYLOR, F.R.S.

M. DUMAS gives the following account of the properties of chloroform:—It is a heavy liquid, transparent like water, having some analogy to the chloride of olefant gas, but its density is greater and its boiling point is lower. Its specific gravity at 64° is 1.48. It boils at 140°, and the density of its vapour is 4.2. It is not inflammable, but it causes alcohol to burn with a yellow smoky flame. When its vapour is passed over copper or iron, heated to redness, it is decomposed, a metallic chloride results, and carbon is deposited; but, according to Liebig, no inflammable gas is evolved. It is not decomposed by potassium; some bubbles of hydrogen are evolved, but it may be distilled over the metal without change. Caustic alkalis do not decompose it, except after long boiling, when it is entirely converted into chloride of potassium and formate of potash. Alcohol and ether readily dissolve it, but it is again precipitated by water from these solutions. It dissolves phosphorus, sulphur, and iodine,—the latter does not decompose it. It may be easily prepared by distilling, in a capacious retort, one pound of chloride of lime with three pounds of water and three ounces of rectified spirit. The weight of chloroform obtained is equal to the weight of alcohol employed.—*Traité de Chimie appliquée aux Arts*, T. v. p. 594.

Before I had seen these remarks, I had undertaken some experiments on the proper-

ties of chloroform; and the results appear to me to show that if this liquid can be cheaply produced, it may hereafter become of important service in chemistry and the arts.

The specimen of chloroform which I examined, was furnished to me by Mr. Jacob Bell, and was procured from Mr. Morsen. Its specific gravity at 60° was 1.434. It was clear and colourless, perfectly neutral, had a warm ethereal taste, without any pungency, and the peculiar odour which characterizes it. A few drops placed on the skin evaporated readily, producing a great degree of cold, but no irritation. When mixed with alcohol and ether, the evaporation was accompanied by slight irritation of the skin. A few drops placed in a glass jar were very speedily diffused in vapour. A lighted taper plunged into the vessel burnt with a smoky flame, but the chloroform itself was not in the least inflammable.

When a few drops were placed on cotton wrapped round the bulb of a spirit thermometer, and introduced into an air-pump receiver, the temperature fell in a few minutes from 60° to 10°.

It was but very slightly dissolved by water. When poured on this liquid, the greater part sank in globules, which had a milky-white appearance (an indication of the presence of alcohol, according to M. Mialhe): the small globules which floated sank on agitation through the liquid. It was so little soluble in water, that three drops placed on nine ounces of distilled water, and well shaken, did not readily disappear, although they imparted a strong odour to the liquid.*

With alcohol and ether it readily forms transparent solutions, which burn with a yellow smoky flame. Water added to the alcoholic solution causes a separation of the chloroform, which falls to the bottom of the vessel. As chloroform is less soluble in water than ether, this process of washing, if performed in a graduated tube, may serve to determine the proportion of alcohol present. The specific gravity and the boiling point, which is 140° for chloroform, and 172° for alcohol, would also enable the analyst to determine the presence of the last-mentioned liquid.

Chloroform readily mixes and combines with the *essential oil of turpentine* and *bisulphuret of carbon*.

It easily dissolves *camphor*, and the solution burns with a yellow smoky flame, having a green edge or border.

It speedily softens and dissolves *caoutchouc*, more readily when pure than when mixed with an equal part of oil of turpentine; al-

* According to M. Dorvault, 2000 parts of water are required to dissolve one part of chloroform.

though in the latter case the softening and solution were complete in twenty-four hours.

It dissolves *amber, copal resin* (with great facility), and all the common *resins*. With red and black sealing-wax it makes a strong varnish. Contrary to the statement of Dumas, I did not find that it perceptibly dissolved *sulphur or phosphorus*.

It dissolves *white wax* and coagulates *albumen*.

It dissolves *Iodine and Bromine*, forming deep red-coloured solutions, and it separates these metalloids from water. A few drops of chloroform shaken with an aqueous solution of iodine or bromine, removes either of these bodies, and the chloroform falls to the bottom of the vessel, acquiring a red colour, the depth of which is proportioned to the quantity of either substance present.

It floats on concentrated *sulphuric acid*, which is only darkened by it at a boiling temperature, when the chloroform is rapidly dissipated in vapour. It slowly decomposes nitric acid in the cold, but at a high temperature deoxidation is rapid, and nitrous acid is abundantly evolved. It scarcely affects a solution of iodic acid, which acquires, after a time, only a faint pink colour.

It contains no free *chlorine*: it has no bleaching properties: it does not decompose iodide of potassium, nor does it dissolve *gold*, either by itself or when boiled with concentrated nitric acid. When *nitrate of silver* was added to it, there was no precipitate,—the chloroform merely acquired that milky opacity which it had when dropped into distilled water; no chloride of silver was formed. In no respect did it possess any analogy to the salts known as chlorides.

It did not decompose chloride of gold on boiling.

It could not be made to combine with a solution of *caustic potash*; and, when *potassium* was dropped into it, the effects were similar to those described by Dumas, with the exception that the particles of metal acquired a dark incrustation, and, after two or three days, the metal had entirely disappeared, leaving a brown sediment.

Dec. 1847.

Medical Intelligence.

INQUEST PROCEEDINGS AT CAPPAMORE.

ON Sunday last, 21st inst. an inquest was held at the police-office of Cappamore, by James Bennett, coroner, on the body of a farmer named Daniel Dillon, who was brutally murdered on the Friday night previous, his skull having been fractured in an awful manner, and his brains left in the field.

Dr. Arthur, resident physician and sur-

geon, having examined the body on the night of the murder, and attended a man who accompanied Dillon, and who was also injured, and considering, in accordance with the act of parliament, that he (Dr. A.) was the person to be called on to give evidence on the inquest, proceeded to the barrack above-named, on the arrival of Coroner Bennett, and went into the head-constable's room. On being introduced to Mr. Bennett, Dr. Arthur said—"How do you do, sir?" and Mr. B. replied that he "could very well do without his inquiry."

The jury having been sworn, proceeded to the house of Dillon to view the body, and Coroner Bennett going to the bed, called on Dr. Heffernan, whom he brought with him, to come and view the body.

Dr. Arthur said—I am the resident physician and surgeon, and I have seen the body on the night of the murder, whereas Dr. H. has not seen it until this moment, consequently I am the proper person to give evidence in this case.

Coroner Bennett—I want to have nothing at all to do with you, nor will I have your evidence, and if you say any more I'll get you arrested by the police.

The party then retraced their steps towards the barrack, and on entering it, Dr. Arthur came forward, and stating that he had valuable information to give, appealed to the jury not to make up their minds until they heard it; whereupon Coroner Bennett, placing himself in a menacing attitude before Dr. Arthur, said, that he would not hear his evidence—that for all he knew about him (Dr. A.) he might be a *quack*, and he knew nothing at all about his family.

Dr. Arthur—I can produce my diplomas, and prove to you that I am a legally qualified physician and surgeon; and if I am not better qualified than Surgeon Heffernan, I willingly resign the case; and as respects family, I consider mine far more respectable than yours.

Sub-Inspector Enright—I can tell you, sir, that Mr. Bennett is a very respectable man.

Dr. Arthur—I say it is not your business to interfere.

Sub-Inspector Enright—Oh, Dr. Heffernan is the man that was called on, and has a right to give evidence here.

Dr. Arthur—It is not for the paltry sum given by the coroner that I came here to-day, but to vindicate the rights of the profession to which I belong; and I appeal to you, Surgeon Heffernan, as a brother in the same profession—if you be a man of honour, and an honest man—to have nothing to do with this case. I went some time back to Doon to assist Surgeon Shanahan—

Dr. Heffernan—I don't care; I was called on by the coroner, and I'll act.

Dr. Arthur—Very well, sir.

Coroner Bennett then rushed over, and catching Dr. Arthur by the collar, swore he'd drag him out if he did not leave the room!

Dr. Arthur—Do not lay violent hands on me, sir.

Coroner Bennett—Mr. Enright, why don't you arrest *that fellow*?

Dr. Arthur—He cannot do that, sir. I intend to commit no breach of the peace. I have the greatest respect for the court. I wait here to hear the evidence given.

Sub-Inspector—I think, Mr. Bennett, we might leave the doctor here, if he is quiet.

Coroner Bennett—No; by G—d, he shall not remain here. Mr. Enright, drag *out this fellow*!

Dr. Heffernan—Had I known that matters would have turned out so, I would not have come at all.

Coroner Bennett (to Dr. Heffernan)—If you do not act, I shall never give you a call again.

Dr. Arthur—Mr. Enright, I warn you not to arrest me; if you do, I shall certainly hold you accountable for the consequences. I committed no breach of the peace, and therefore you cannot arrest me.

Sub-Inspector Enright—I shall do my duty if the coroner desires me.

Dr. Arthur—Then you shall take the trouble to make out my committal before you remove me.

Coroner Bennett—I shall do that for you, sir.

Then Dr. Arthur was removed into the head constable's room, a policeman placed on the door, where he was detained over two hours, at the expiration of which time Mr. Enright came and told him that he might go now as soon as he wished.

Dr. Arthur requested a magistrate should come and discharge him.

Mr. Enright replied, *he* had the magistrate's order to do so. Dr. Arthur was then removed, and threatened to proceed legally against Coroner Bennett for false arrest, &c.
—*Dublin Medical Press.*

DANGEROUS EFFECTS PRODUCED BY THE BLEACHING OF LACE.

IN the process of manufacture, Brussels lace is liable to become soiled. If it were washed, its value would be reduced; hence the so-called bleaching of this lace is effected by impregnating the fibre with carbonate of lead. M. Blanchet has recently communicated to the Academy of Sciences some cases in which he had observed that the workmen engaged in this manufacture suffered from an impairment of the senses of vision and hearing. The disease presented all the characters of saturnine paralysis. He visited the manufactory, and ascertained that the lace, covered with the finely-powdered

carbonate of lead, was well beaten between sheets of paper. The workmen thus breathed an atmosphere constantly impregnated with the poison. The cause of the symptoms was at once explained.

. There is nothing new in this observation. M. Chevallier has already called the attention of the French Government to the subject. He observed that the workmen were liable to suffer from colica pictonum, and has suggested that the disease might also appear as a just retribution in those females who were in the habit of wearing lace so whitened, in contact with the skin.

DR. BURROWS' EVIDENCE BEFORE THE PARLIAMENTARY COMMITTEE ON MEDICAL REGISTRATION.

LAST week the House of Commons agreed to the re-appointment of the committee which, at the close of the previous Parliament, had commenced to investigate the grievances of medical practitioners. Once more, therefore, the dissensions which have divided the members of that profession are brought before the view of a reluctant public, nauseated with the very name of physic, and more inclined than ever to ask "who shall decide when *doctors* disagree?" Past experience, moreover, holds out little encouragement to the statesman who would seek to reconcile the discordant elements of medical organisation. But the course which the agitation has been allowed to take during the present autumn, introduces a new and a most insuperable obstacle to efficient interference, and erects a system of practical intimidation over the witnesses of a parliamentary committee, which, if extended to similar inquiries, will prove as intolerable as it is dangerous. If there be one form of parliamentary practice which would become more valuable to the public than another—when used with average honesty and fair intention—it is the power of calling "skilled witnesses" before its committees, deriving national advantage from their experience or their ingenuity, and directing the efforts of legislative amelioration by the light of special and practical knowledge. The perversion of this great privilege to party purposes is bad enough—too frequent, perhaps, to excite surprise, and too open to escape attention—but if such perversion deserves exposure and reprobation, what terms will sufficiently stigmatize the actual intimidation of witnesses? The one may lead, it is true, to a report tainted by political bias; but the other effectually stifles every chance of a free inquiry, and arrests the further flow of evidence in any but the popular direction. For what man of ordinary sensibility will voluntarily expose himself, first to be baited and badgered in a committee-room with insidiously-prepared questions,—next to have

his evidence printed like that of Dr. Burrows with distinctive italics in the *Lancet*,—then to have every general practitioner bounded on to attack him,—and finally his own lecture-room filled with strangers to hoot and yell down the frank expression of opinion—an opinion moreover not promulgated there, but extracted by the questions of a parliamentary committee some three months previously. It is difficult to conceive a more monstrous and tyrannical perversion of the high purposes of a legislative inquiry. Not only must men of strict honour now hesitate, before they sit on a committee which is eventually made the instrument of such foul injustice, but the public at large must be prepared to hear that witnesses will refuse to attend without special protection from the chairman, and that men of high standing and wide experience will not give the legislature the benefits of either, so long as they are exposed to vulgar detraction and crafty misrepresentation, as the only acknowledgment of their ability or their public spirit. The crime which has produced this dangerous misuse of parliamentary privileges is simply this—that the witnesses examined before the committee of last session concur in considering the majority of physicians to be men of more ample means and a more extended education than the general practitioners. The whole sting of this resides in its truth; but if such truths are to be stifled on a grave investigation,—if no man, under the penalty of hooting and yelling, dare blast a doubt of the classical attainments, the enlarged and liberal education, the sound sense, the great learning, and the refined taste of the general practitioner of medicine, where is the boasted freedom of speech and thought which fills the mouths of agitators and demagogues.—*Morning Herald*?

THE PLAGUE.

It seems extraordinary that the causes and proper treatment of the plague should remain a mystery up to this hour, though it was described by Thucydides and cured by Hippocrates two thousand years ago. Almost every practitioner who has an opportunity of observing its symptoms entertains a different theory with regard to its nature. The medical men of the Russian Commission at Alexandria were non-contagionists: they procured the diseases of persons who died of the plague, and paid Arabs at the rate of a shilling a day to wear these dresses. The only precaution taken was to submit the clothes for twenty-four hours to a moderate heat. The applicants for these dangerous trials were numerous; not one took the infection, and the Russians triumphed in their theory: but, strange to say, their president took the disease himself, and died before he could decide on his mode of treatment.

INFLUENZA FATAL TO AGED PERSONS.

IN the influenza of 1837, it was remarked that persons under the age of 60, male as well as female, required but slight attention to get safely, and in a few days, through the malady; but all of those indiscriminately who were so far advanced as 60, suffered most severely, and had a long and dangerous illness, being confined to bed with cough and copious expectoration for some time.

It proved fatal chiefly to those who were much enfeebled by old age, or chronic disease of the lungs, especially chronic bronchitis and asthma. Among children it was particularly fatal to those who were affected by whooping-cough, or any of the exanthematous diseases.

DURATION OF INFLUENZA.

ACCORDING to Dr. Streeten, the disease may be divided into an acute stage, lasting generally from two to four or five days, the disease frequently terminating altogether at the end of that period; and a second or more chronic stage, in which the symptoms continued in a slighter form for a period varying from five to ten days, or even a fortnight more; and many after this were affected with a state of general debility for an indefinite period.

THE CHOLERA IN RUSSIA.

ACCORDING to official documents from St. Petersburg of the 2d, the cholera was sensibly on the decline in Russia. From the appearance of the disease up to the 22d of November, the total number of persons attacked at Moscow was 2,360, of whom 1,997 died. In the districts of the government of Moscow 141 individuals fell ill, of whom 59 died. At Kiev, from the 9th to the 16th of November, there were 179 cases and 129 deaths. In the province of Kiev, up to the 13th of November, 93 persons died out of 139 attacked. With the cold season, and the extension of the malady towards the west, the disease had lost a great deal of its energy. It was, in fact, declining everywhere, except in the governments of Paltova and Tchernigoff, where it appeared to increase. The places newly invaded by the cholera are Mohileff, on the Dniéper; Khereson, on the Black Sea; Vologda and Tver, on the road from Moscow and St. Petersburg; but in those places it is of a mild character.

According to the latest intelligence from Constantinople, the cholera was stationary. Not more than one or two cases occurred daily, and they seldom proved fatal.

REPORT ON LUNACY.

THE second annual report of the Commissioners in Lunacy, signed by Lord Ashley, and presented to Parliament, has just been printed. It appears that the Commissioners have collected a mass of information on the subject of lunacy, which they have embodied

in a further report, and recently presented it to the Lord Chancellor. The report so made, the Commissioners state, carries down the state of lunacy and lunatic establishments almost to the present time. It appears there are 2,853 lunatics in the metropolitan licensed houses. In six months, ending on the 4th of August last, Dr. Turner, as Commissioner, saw 8,276 patients; Dr. Hume, 2,079; Dr. Prichard, 6,723; Mr. Procter, 8,267; Mr. Mylne, 3,319; and Mr. Campbell, 9,939 patients.

EXPERIMENTS ON THE ACTION OF CHLOROFORM VAPOUR.

M. GRUBY has recently announced to the Academy of Sciences, that the effects of chloroform vapour on dogs and rabbits, compared with those produced by ether vapour, are as follows:—

1. That during inspiration the arterial blood retains its florid colour, and if under asphyxia it assumes the dark venous character, the red colour is speedily restored.

2. That a part of the animal, a limb for example, separated from the body and exposed to chloroform or ether vapour, becomes insensible.

3. That if the member be removed from the vapour, sensibility is restored.

4. That during the inspiration of chloroform vapour the number of respirations increases with the degree of insensibility produced.

5. That animals may be kept in a state of insensibility for several hours, and afterwards restored, if the inspiration of the vapour be occasionally interrupted.

6. That on the other hand, rabbits, dogs, and frogs, die suddenly in from one to four minutes after respiring the vapour, if the dose of chloroform is from 46 to 60 grains, and the inhalation be uninterrupted.

The advantages possessed by chloroform over ether are, according to M. Gruby,—

1. That arterial blood remains red under the influence of chloroform, but becomes black under the action of ether.

2. That insensibility is more rapidly induced by chloroform, and sensibility is, *ceteris paribus*, more quickly restored.

3. That the flesh of animals killed by chloroform may serve for food, while animals which have been killed by ether, cannot be used for food.

The disadvantages of chloroform consist in its more rapid action and the greater danger to which the individual is exposed.

. The most important practical result of these researches is, that the inhalation of chloroform vapour should be occasionally interrupted, and that some caution should be used respecting the dose of liquid employed. The third advantage of chloroform vapour indicated by M. Gruby, namely, that animals

killed by it may be eaten for food, might be of some importance to the anthropophagous inhabitants of the South Sea islands. It does not appear to have any practical application to its employment for surgical purposes.

PROPORTIONS OF THE SEXES IN POPULATIONS.

The proportion of males to females is—

	Males.	Females.
In Prussia	100	104.93
In France	100	104.3
In Austria	100	103

The number of females commences to preponderate only at about the fortieth year.

ELECTION OF FELLOWS AT THE ROYAL COLLEGE OF SURGEONS.

THE following members of the College presented themselves for the necessary examinations for the Fellowship of the institution, in pursuance of the charter recently granted to the Council, and were admitted by that body Fellows of the College, on the 16th inst., viz.:—Messrs. Elias Taylor Warry, Lyndhurst, Hampshire, the diploma bearing date Sept. 2, 1825; John Cockle, Guildford Street, Russell Square, April 3, 1835; Caleb Badford, Uckfield, Sussex, June 12, 1835; John Skothert Bartrum, Bath, May 11, 1838; Thomas Snow Beck, Upper Marylebone Street, April 29, 1839; William Clapp, Greenwich, August 30, 1839; Dennis De Berdt Havell, Clapton, Nov. 1, 1839; John William Fletcher, Bengal Army, Dec. 6, 1839; and Thomas Callaway, jun., Wellington Street, Southwark, May 24, 1844.

APOTHECARIES' HALL.

NAMES of Gentlemen who passed their Examination in the Science and Practice of Medicine, and received Certificates to Practise, on Thursday, Dec. 16, 1847:—Alexander George Cockburn Thiselton, Heworth, York—Gustavus Irwin Knight, Tilbury Fort—Horace Harrison Smith, Ramsgate—William Henry White, Stevenage, Herts—Hugh Green, Bexford, Suffolk.

THE SUCCESSOR TO MR. LISTON.

A NUMBON is already current that Professor Syme, of Edinburgh, is about to leave his practice in that city, and to assume the office of Professor of Clinical Surgery at University College Hospital, rendered vacant by the death of Mr. Liston.

OBITUARY.

On the 15th ult. at Toronto, of typhus fever, Joseph Hamilton, Esq., M.D., aged 51, sixth son of the late Hon. Robert Hamilton, of Queen's Town, Canada West.

On Saturday, at Grove End Road, St. John's Wood, John King, Esq., Surgeon, aged 36.

OBITUARY NOTICE OF THE LATE MR. LISTON.

THE late Mr. Robert Liston was born on the 28th of October, 1794, in the parish of Ecclesmachan, Linlithgow, West Lothian, Scotland, where his father was minister. His grandfather and great-grandfather were also ministers of the Scotch Church. His father, Mr. John Liston, was distinguished for his musical taste and acquirement—and invented an organ, whose sounds distinguished fractions of the notes in the ordinary scale. The subject of this notice was the eldest of four children—two daughters, who now reside near Edinburgh, and a son, who recently was a candidate for the chair of Hebrew in the University of that city.

Robert Liston was sent for a short time to a school at Abercorn; but he received the principal part of his education under the direction of his father, who was a man of sound classical acquirements. The son subsequently became distinguished for his familiarity with Latin literature. In 1808 he was sent to Edinburgh; where he attended the courses of lectures on Latin, Greek, and mathematics for two sessions. During his second session, he obtained a prize for Latin composition. At this period of his life he exhibited great fondness for the sea; and was induced to abandon his wish for a nautical life only by a promise that if he studied medicine, he should eventually enter the navy as surgeon, if he wished. This early love for the sea has led to a report that he was once in the navy—which is not the case. His taste for a sea-faring life, however, never forsook him; and one of the relaxations, in which he indulged till within a few weeks of his death, was sailing in a yacht which he kept on the Thames.

In 1810, Mr. Liston was entered as a pupil with the celebrated Dr. Barclay, who, though not a professor in the College, yet added much in his day to the reputation of the University of Edinburgh by his learned and original lectures on anatomy and physiology. The pupil subsequently became the principal assistant of Dr. Barclay, who entertained for him the most sincere esteem. He attended at the same time the lectures of Drs. Gregory, Hamilton, Duncan, and Home. In 1814 he had made so much progress in his studies that he was appointed house-surgeon to the Edinburgh Infirmary. After remaining in this position about two years, he came to London to finish his surgical education; and entered in 1816 as a pupil at the London Hospital—at the same time attending the lectures of John Abernethy. In the same year he was admitted a member of the Royal College of Surgeons of London; and subsequently returned to Edinburgh, where he settled—having been

made a member of the Royal College of Surgeons of that place in 1818.

As a student he had given indications of that skill in operating on which so much of his future reputation was to depend; and during the first few years of his practice in Edinburgh, his success was so great that it gained him not a little jealousy and ill-will. He was frequently obliged to defend himself from the misrepresentations of his enemies at the Medical Society of Edinburgh, at a period when that society had attained its greatest reputation. Notwithstanding the opposition with which he met—and which is not unfrequently the attendant of a successful professional career—he was appointed surgeon to the Edinburgh Infirmary in 1822. Here he added to his reputation by the increased facilities which this institution afforded him for the exercise of his skill in the operative department of his profession. His fame was no longer confined to his *alma mater*; but the skill with which he performed some of the most formidable operations in surgery, and their successful results, gave him a European reputation. Accordingly, when the new hospital attached to the medical school of University College was opened,—unfettered by medical cliqueism, and bound to no interests save those of the charity and the Medical School,—the Senate of that Institution invited Mr. Liston to become one of its surgeons. This invitation he accepted, and commenced his career in London in 1833. Although he was appointed Professor of Clinical Surgery at University College, the only complete course of lectures on surgery which he delivered in London, was in connexion with the School of Medicine adjoining St. George's Hospital. On the death of Sir Anthony Carlisle in 1840, he was appointed a member of the Council of the College of Surgeons, and one of the Board of Examiners in March, 1846. He had thus reached almost the highest honours which his profession had to bestow, when seized with the illness that terminated his life.

At the beginning of the year he had complained of difficulty of swallowing; but this excited little uneasiness till last July, when he was suddenly seized with hæmorrhage from the throat, by which he lost above thirty ounces of blood. The source of this hæmorrhage was not ascertained; and by a little care for a few weeks he recovered his health sufficiently to resume his practice. On the 1st of December he had an attack of difficulty of breathing, which continued with little or no relief till the 7th, when he died. On inspection, it was found (as we stated last week) that the cause of death was aneurism of the arch of the aorta. The tumor was seated in such a position as to render it difficult of detection during life.

In person Mr. Liston was tall, strong, and well made, with a powerful muscular development, which contributed not a little to his success as an operator. His hand and arm might have formed models for a Hercules; and the power which they possessed, governed by a well-disciplined will, formed a not unimportant element of the dexterity which he exhibited in the performance of surgical operations. These powerful limbs might be compared to the trunk of an elephant, which is equally competent to the pulling down of a tree and the picking up of a pin;—so Liston's hands availed him for those operations in which manual power alone enabled him to use his instruments with success, as well as those in which the most delicate manipulation was required. His mind was more distinguished by perceptive than by reflective power. He arrived at his conclusions with astonishing rapidity, and seemed to comprehend at a glance the requirements of any particular case. This faculty of reaching correct conclusions without the mind's being cognisant of the intervening processes, is undoubtedly an attribute of genius, and it was one which in no small degree contributed to Mr. Liston's success as a surgeon, and gave him the boldness and decision that he evinced when performing the most appalling operations in surgery. To these physical and mental powers he added great industry. He was a constant student of anatomy, spending much of his little leisure time in the practice of dissection.

Great, however, as was Mr. Liston's success as an operative surgeon, his influence on his profession will, we believe, be more felt through the general principles on which he acted in the treatment of surgical diseases. He early saw the folly of over-treating disease, and learned to trust to those curative powers that are natural to all living structures: hence he adopted and inculcated a simplicity of treatment in surgical diseases which even at the present day contrasts strongly with the practice of those who yet cling to the poulticing, strapping, bandaging, and anointing, that characterised the surgery of a past age.

Mr. Liston did not write much. When in Edinburgh, he published a work entitled "Elements of Surgery," of which a second edition appeared subsequently in London. This work proved that he was abler as a practical surgeon than as a writer. Those portions are most instructive in which the author details his own experience in operating and in the treatment of wounds. This led to his publication of a work "On Practical Surgery" in 1837, which, being a record of his own peculiar experience, obtained a rapid sale, considering its kind, it having reached a fourth edition in 1846. It

embodies all that is possible in such a work, of his plans and modes of procedure, more especially in operations, and is undoubtedly one of the most important contributions to the literature of practical surgery in the English language. Mr. Liston published some other smaller works and papers in the "Transactions" of medical societies; and the medical journals contain copious reports of his clinical lectures delivered at University College, and of the cases treated under his care. Although thoroughly practical in the general tendency of his mind, he was yet alive to the influence of scientific researches on his profession, and made some interesting observations on the microscopic characters of certain forms of inflammatory disease, which were published in the "Medico-Chirurgical Transactions." He was elected a Fellow of the Royal Society in 1840.

In private Mr. Liston was much respected; for, though his manners were somewhat rough, and might even to some appear repulsive, he had a generous heart, and was capable of the warmest attachments. The esteem in which he was held was attested by the numbers who followed his remains to the grave. He was buried at the Highgate Cemetery; at the bottom of the hill near which, the hearse was met by upwards of four hundred of his pupils and friends. These attended the body to the church, and from thence to the grave, where nearly three thousand persons were collected to pay their last testimony of respect to one to whom, when living, they had been in most instances indebted for relief from personal suffering.

Mr. Liston has left a widow and six children — four daughters and two sons. — *Athenaeum*.

Selections from Journals.

PATHOLOGY.

ON THE MORBID ANATOMY AND PATHOLOGY OF THE TYPHUS FEVER WHICH HAS BEEN PREVALENT IN EDINBURGH DURING THE SESSION 1846—7. BY DR. HUGHES BENNETT.

UNTIL the commencement of the present session, cases of intestinal lesion in typhus fever have been exceedingly rare. During the three years the author acted as pathologist to the Royal Infirmary previous to the present session, and during which he had examined upwards of 500 individuals who had died of the disease, he had only met with it three times. Since November, however, they had become more frequent, and the author had studied the morbid anatomy of typhus in reference to the opinions put forth

by Rokitanzki, Engel, Hammernick, Gussburgh, and other pathologists of the Vienna and Prague schools of medicine. According to these observers, typhus fever is accompanied by a dyscrasia of the blood, and the intestinal and other lesions produced contain a peculiar deposit called typhous deposit, which bears the same relation to the constitution of the blood as tubercle and cancer do to the tubercular and cancerous cachexie. The cases of fever admitted into the Royal Infirmary from the 1st of November 1846 to the 30th of June 1847, amounted to 2071. Of these 278 died, owing to the imperfect arrangements which exist in the Royal Infirmary: however, regarding post-mortem examinations, only 63 of these cases had been inspected after death. It was upon these data that the following statements were founded:—

The organ most frequently affected was the spleen. In the majority of cases it was more or less enlarged and softened, presenting a mahogany brown colour, and creamy consistence; so that, when pressed, nearly the whole of its parenchyma could be squeezed out of its capsule. In ten cases the spleen contained one or more infiltrated masses of typhous deposit of a yellowish or brownish-yellow colour. In two cases the deposit softened and burst into the peritoneum, causing fatal peritonitis. The organs most frequently affected after the spleen were the lungs. The most common lesion was bronchitis, the bronchial lining membrane being of a deep mahogany or purple colour, more or less infiltrated with serum or exudation. The fine bronchial tubes were frequently filled with a mucopurulent matter more or less fluid; and, in a few cases, choked up with a reddish-brown creamy substance, probably a modified form of the exudation (typhous deposit) of Ramak. The apices of the lungs were very commonly cedematous, yielding on section a copious, greyish, frothy fluid. In fifteen cases the lungs were more or less consolidated by exudation, which seldom presented the characters of normal hepatization. It was sometimes of a dirty-yellow tint, at others of a brownish chocolate colour, existing in masses of irregular outline, and of variable size, resembling the typhous deposit previously spoken of, occasionally found in the spleen. In three cases there was pulmonary apoplexy. The intestines presented the lesion so well described by Bretonneau, Louis, Cruveilhier, and others, (dothi-enteritis, typhoid ulcer, &c. &c.), in nineteen cases. The peculiar elevation, alonging, and ulceration of the round and oval patches had been carefully observed, and the anatomical description given by Mr. Goodair, (*Monthly Journal*, p. 353, 1842), for the most part confirmed. The elevated

patches had been observed occasionally to extend as high as the duodenum, and as low as the rectum. In one case, numerous dothi-enteritic elevations, about the size and shape of a split pea, extended all over the ascending and transverse colon. In a few cases the isolated follicles in the large intestines were observed swollen and empty, presenting in their centre a dark blue or black spot. In others, the round and oval patches of the small intestines were hypertrophied, elevated above the mucous membrane, and of a greyish or slate colour. Perforation of the intestine, causing fatal peritonitis, had occurred in three cases. Dysentery, with flakes of lymph attached to the mucous membrane, over the ascending and transverse colon, was associated with intense dothi-enteritis in one case. Oval and round cicatrices, exhibiting different stages of the healing process of the intestinal typhous ulcer, were observed in two cases. In all cases where the intestinal allocations were recent, the mesenteric glands were enlarged, soft, and friable, and of a greyish or reddish-purple colour. Some of these glands reached the size of a hen's egg. On section, they presented a finely granular surface of a dirty yellow-greyish or dark fawn colour, produced by infiltration of the typhous deposit, which was generally soft and friable, but sometimes in one or more parts of the swollen gland broken down with a fluid of creamy consistence. In two cases there were glanitis and laryngitis, with tonsillitis; in one case abscess in the kidney, and in one an abscess in the posterior mediastinum.

The brain did not appear to participate much in the disease. It presented only occasional congestion, with slight effusion into the sub-arachnoid cavity, or into the lateral ventricles.

The blood in the great majority of cases was fluid, and of a dirty brownish colour. In those instances, however, where the disease had been protracted, and especially in such as presented well-marked typhous deposit, firm coagula were found in the heart and large vessels.

In seven cases no lesion whatever could be discovered.

The typhous deposit consists of a yellowish or flesh-coloured exudation, sometimes passing into a brownish colour from the admixture of more or less blood. When first formed it is of a tolerably firm consistence, as in the spleen and glands of the mesentery and intestines, but rapidly undergoes the process of softening. In parenchymatous organs it may be slowly absorbed or resolved, as in the lungs, spleen, and mesenteric glands, or it may produce ulceration or gangrene. In either case, should the individual recover, cicatrices with puckering in the tissues are

produced, the parenchyma around the deposit having contracted and become indurated. On mucous membranes the deposit is thrown off in the form of slough, and discharged by the excretory passages, leaving a characteristic round or oval-shaped ulcer. This process may be followed by cicatrization or perforation of the gut by ulceration. In the former case it leaves a round or oval-shaped depression in the mucous membrane, often of a blue colour, which subsequently becomes covered with epithelium: in the latter case it produces death by peritonitis.

The minute structure of the typhous deposit varies in different situations. In the lungs, spleen, and intestinal canal, it contains at an early stage a number of irregularly-shaped corpuscles. They are about the 1-100th of a millimetre in diameter, contain several granules, with a nucleus about the 1-500th of a millimetre in diameter. Acetic acid renders them more transparent. They are conjoined with numerous granules and molecules, which become more abundant as the process of softening advances. In the mesenteric glands a higher degree of cell formation takes place. Cells are formed about 1-50th of a millimetre in diameter, containing from two to six, and even sometimes more nuclei, which become very distinct with thick edges on the addition of acetic acid, whilst the cell wall is partially dissolved. The same cells may occasionally be seen in the elevated typhous deposits of the intestinal glands. Sometimes the only appearance observable in the deposit is that of numerous molecules and granules mixed with blood corpuscles. Dr. Bennett considered that the pathology of this affection consisted in a primary alteration of the blood, caused by the peculiar miasm or poison causing typhus fever; that, under such circumstances, local inflammations were set up in particular organs, and that the exudation attending it, instead of presenting the usual appearances, and undergoing the usual transformations, became modified so as to constitute the typhous deposits.

Dr. Christison noticed some time ago, (*Art. Fever, Lib. of Medicine*), that the Edinburgh fever was especially characterized by pulmonary complications. We know that in France and Germany intestinal lesions are most common. During the present session, however, the latter had also become frequent in Edinburgh, and it was a fact worthy of observation, that this change occurred at a time when sourry and bad diet prevailed, circumstances often known to be associated with this form of fever in France and Germany.—*Report of the Edinburgh Med. Chirurg. Society: Monthly Journal of Med. Sciences, October 1847.*

SOFTENING OF THE INTESTINAL MUCOUS MEMBRANE IN CHILDREN. BY DR. FLESCHE.

AMONG other morbid changes found in the intestinal canal of infants, Dr. Flesch mentions as by no means an unfrequent occurrence the appearance of softening of the mucous membrane. This softening he describes as being of two kinds; red and white. In the red softening, a greater or less extent of surface of the mucous membrane, more frequently that of the small intestine, is found to have lost its consistence, so that it can be readily scraped off with the back of a knife. Its colour is for the most part natural, except in a few patches, where the membrane has assumed a rosy hue which cannot be washed off. The membrane frequently has a pulpy oedematous appearance, and in such places its proper texture is no longer discernible. At the softened patches of mucous membrane, the other coats of the intestine very readily tear. The conditions of the solitary, Peyer's, and mesenteric glands in such cases of softening are by no means uniform.

In the white softening the anatomical characters of the membrane are the same as in the red variety, but at the same time the mucous and other coats of the intestine have a singularly full appearance. According as the mucous coat is reduced to a more or less pulpy gelatinous state, so is the amount of the natural tissue of the membrane that can be found in the softened matter scraped from the mucous surface. In the white softening there is invariably a larger tract of the intestine affected than in the red, obviously owing to the longer duration of the former variety. The Peyerian patches of glands, without having undergone any morbid change, are more apparent than ordinary, probably owing to the singular paleness of the rest of the mucous membrane. This white softening, which is always a chronic affection, is likewise one of the appearances found after death from atrophy. That the original cause of the white softening is an inflammatory condition of the mucous membrane, is rendered probable from the gradual transition of the red softening into it, and from the analogous origin of white softening in other organs, as in the brain.—*Schmidt's Jahrbucher, Nov. 3, 1847.*

SURGERY.

CASE OF AXILLARY ANEURISM, FOR WHICH THE SUBCLAVIAN ARTERY WAS TIED WITH SUCCESS. BY JAMES SYME, ESQ.

HAVING already placed upon record two instances of life being preserved, under very peculiar circumstances of axillary aneurism, by amputation at the shoulder-joint, I have

now the more pleasing duty of relating a case of the same disease remedied by a ligature of the artery, without removal of the limb.

A gentleman, 34 years of age, from the north of Scotland, recommended by Dr. Ross, of Tain, applied to me on the 25th of July, on account of an axillary aneurism of the right side: it was of a large size, filling the axilla, and pressing forward the pectoral muscle, so as to be distinctly perceptible through the clothes. The patient stated, that, about sixteen years ago, he had fallen down a stair, and, by an involuntary effort to save himself, had seized the railing with the right hand, and, consequently, sustained a very severe wrench of the limb. With the exception of some pain, and the ordinary uneasiness attending such an injury, he had not afterwards suffered any noticeable inconvenience further than an occasional difference of temperature in the hands, until about ten months ago, when he began to suffer from pain in the little and ring fingers, which gradually became almost constant and extremely distressing. More lately the axillary tumor had attracted attention, and on the 29th, with the assistance of my friends, Drs. Duncan and Mackenzie, I tied the subclavian artery, where it emerges from the scalenus anticus, by a single silk ligature, drawn with all the tightness in my power. No inconvenience whatever was experienced. The ligature separated on the fifteenth day, and the patient, at the end of another fortnight, returned home, perfectly free from pain, and with hardly any perceptible remnant of the tumor. In performing the operation, I made an incision along the clavicle, so as to extend over the edges of the sterno-mastoid and trapezius muscles, and another from the centre of this upwards, parallel with the edge of the latter muscle. The dissection was conducted entirely by the knife and forceps. The needle was passed under the artery, with its convexity upwards, and the ligature was tied by the unaided effort of the fingers. It has been advised to pass the needle with its convexity downwards or towards the clavicle, with a view to protect the vein from injury. But this vessel is not at all in the way, while the cervical nerves are so situated in regard to the artery as in general to render it nearly, if not quite, impossible to convey the ligature from below upwards. It has also been advised to employ the assistance of some mechanical contrivance for tightening the knot; but I feel persuaded that the thread will always be within reach of the fingers, and may be more safely tied by them simply than with the intervention of any instrument.

—*Monthly Journal of Medical Science*, Oct. 1847.

TWO CASES OF CROUP, CURED BY CAUTERIZING THE LARYNX WITH A SOLUTION OF NITRATE OF SILVER. BY W. N. BLAKEMAN, M.D.

On the 10th November, 1846, I was called to see a child of Mr. A., about 2 years old, very fat, large of his age, and of leucophlegmatic temperament. I first saw him at ten o'clock in the evening, five hours after the commencement of the disease, with a hot dry skin, quick pulse, great restlessness, laborious breathing, and the hoarse barking or crowing sound peculiar to croup. The family had, previous to my arrival, given freely of Coxe's hive syrup. I gave tinct. sang. comp. syrup scillæ, with pulv. ipecac., which caused vomiting, but no relief to the patient. At three o'clock on the morning of the 11th, I gave six grains of prot. chlor. hyd., and after waiting two hours, began with the above mixture, to which I added five grains of tart. antim.; more free vomiting was produced, and a copious discharge from the bowels at 8 o'clock, but without any mitigation of a single symptom. I then stopped using the above mixture, and gave persulph. of mer. in quarter-grain doses. The second dose to be given in half an hour after the first, and then at intervals of an hour. The child drank freely of warm water, and vomited some after each repetition of the medicine, but none of that peculiar heavy glairy substance, which is the secretion of this specific inflammation. At 5 o'clock, P.M., the remedies having done no good, and with the symptoms of suffocation becoming alarming, I resolved to try the effect of cauterizing the larynx with a solution of nitrate of silver, a drachm to an ounce of water. The application was somewhat difficult, and the dyspnoea very great. A quantity of the thick tenacious substance was brought away by the sponge, &c., a large quantity by vomiting which followed.

After waiting ten minutes, I made a second application, bringing away a larger quantity of membranous matter on the sponge than before, and a much more copious discharge accompanied the vomiting caused by the application. The disease now seemed to be arrested, as very great relief was apparent to all the family. The breathing was less laborious; the crowing sound less sharp; and the child more quiet.

I saw the boy at half-past 10 o'clock same evening, five hours and a half after the first application; he had improved in all the symptoms, breathing decidedly better, the barking sound heard only at intervals, and he had asked for drink.

I now made a third application of the same solution, which brought as before, on the sponge, some thick tenacious matter,

differing from the first in being of a yellow colour. The boy vomited *several* times after *this* application, each time throwing off a large quantity of the same yellow-coloured thick substance, so tough that it might be raised from the bowl by the fingers. Soon after the vomiting ceased, the child was so much better that he fell asleep, in which situation I left him, with directions to be called if required before morning.

12th, 7 o'clock, A.M., I found him sitting on the bed calling for food; he had slept pretty well, asking for drink occasionally; a slight hoarseness left, for which he required no further treatment.

CASE II.—I was called on the 20th of January, at twelve o'clock at night, to see a boy 6 years old, of sanguine temperament and florid complexion, who was taken, about two hours before, with croup. The pulse quick; skin hot and dry; the breathing hurried and difficult; the crowing noise loud and the child very restless. I determined that the remedy used last in the former case should be the first in this. I made two applications of the same solution used in the former case. Some tough phlegm came away on the sponge, and free vomiting followed, which relieved the patient, so that he fell asleep.

21st, 7 o'clock, A.M.—The boy has slept well all night, and says he is quite well, only a little hoarse.—*New York Medical and Surgical Reporter, and Philadelphia Medical Examiner.*

. We are by no means certain that either of the above cases was in reality examples of true croup; that of the elder child especially much more nearly resembled the spinous croup, depending upon gastric irritation, so frequently met with in children of that age, and so generally curable by the use of emetics.—*ED. GAZ.*

ORGANIC CHEMISTRY.

COMPOSITION OF THE MILK OF CARNIVOROUS ANIMALS.

It was formerly stated by M. Dumas,* that when carnivorous animals are fed for a length of time entirely on animal food, no lactic sugar can be detected in their milk; and from this circumstance he was led to infer that the presence of this sugar in the milk of these animals is entirely due to amylaceous substances which may have entered into their food. From repeated examinations, however, of the milk of bitches, Dr. Bensch,† of Giessen, finds that even after these animals have been fed exclusively on flesh for several weeks, the sugar does

not disappear from their milk. It is true that the lactic sugar is with difficulty detected; but in the form of grape sugar, its presence can be invariably demonstrated by means of liquor potassæ. The ash of bitches' milk consists for the most part of phosphate of lime and phosphate of magnesia: to the presence of an acid phosphate of lime is probably due the acid reaction originally possessed by the milk of these animals.

PHYSIOLOGICAL CHEMISTRY.

COMPOSITION OF THE BLOOD OF NEW-BORN ANIMALS.

A SERIES of experiments have been performed by M. Poggiale, for the purpose of ascertaining whether any difference exists between the composition of the blood of new-born animals and that of the adult. In the young of all animals, except of the bitch, it appears that the blood contains a smaller proportion of solid matter (especially of fibrine) and of globules, than in the adult. In young dogs the relative quantity of globules is large. In the blood of the newly-born human subject, the proportion of solid matter is large compared with that in the blood of the adult; the quantity of globules is especially large, that of fibrine small. Albumen and fatty principles exist in about the same proportion in the blood of the infant and the adult. Oxide of iron is more abundant in the blood of the former than of the latter. — *Comptes Rendus*, 2 Août, 1847.

CHEMICAL PATHOLOGY.

ON THE DETECTION OF BILIPHÆIN IN ALBUMINOUS FLUIDS. BY DR. HELLER.

It has long been known that the presence of the colouring principle of bile in any animal fluid may be ascertained by the addition of nitric acid, which induces a rapid succession of changes in the colour of the fluid, producing first a green tint, then blue or violet, then red, and lastly yellow. But in order that this play of colours may take place, it is necessary either that the biliphæin should exist in large quantity, or that, if in small quantity, a particular method should be pursued in applying the test. This method consists, according to Heller, in adding the acid very gradually, and stirring the mixture until the green colour appears; then in adding a few drops more of the acid, and stirring again, upon which the blue or violet tint is produced; and by a similar cautious addition of the acid, the other characteristic colours may also be manifested.

In a former essay* Dr. Heller pointed out

* Vide *MED. GAZ.*, vol. xxxviii. p. 375.

† *Ann. der Chemie und Pharmacie*, No. 2, 1847.

* Vide *MEDICAL GAZETTE*, 1845, vol. i. page 1089.

an easy method of detecting the colouring matter of bile in an albuminous fluid, and shewed the advantage afforded by the presence of the albumen in allowing the existence of even the smallest quantity of bile to be ascertained. Since then, however, he has found another method, by which he says the same information may be obtained with greater certainty, and less liability to error. This consists in dropping into a test-tube containing concentrated hydrochloric acid portions of the albuminous fluid supposed to contain biliphsin, until the albumen appears as if about to coagulate. Nitric acid is then to be gradually added, and on stirring the mixture a distinct green colour speedily appears if biliphsin be present; and if this substance exist in tolerable quantity, the green colour is shortly succeeded by the other characteristic tints.—*Heller's Archiv*, 1847, Heft iv.

WOUNDS OF THE TONGUE.

SURGEONS have puzzled their brains as to the best means of keeping the parts of a wound of the tongue together,—whether by stitches, &c. The fact is, all meddling does harm. If the patient will keep the tongue quiet at the bottom of his mouth, the wound will heal, as I have seen, better than any thing his busy hand can do to effect it.—*Vincent's Observations on Surgical Practice*.

MEETINGS OF MEDICAL SOCIETIES APPOINTED FOR THE ENSUING WEEK.

Medical . . . Mon., Dec. 27, 8 P.M.
Hunterian . . . Wed., " 29, "

METEOROLOGICAL SUMMARY.

Mean Height of Barometer 29.75
" " Thermometer 48°
Self-registering do. max. 6 min. 27°
" in the Thames water — 45.8 — 44°

a From 12 observations daily. b Sum.

RAIN, in inches, '09: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 52° above the monthly mean (39.5°).

BIRTHS & DEATHS IN THE METROPOLIS

During the week ending Saturday, Dec. 18.

BIRTHS.	DEATHS.	Av. of 5 Auts.
Males.... 690	Males.... 980	Males.... 528
Females.. 629	Females.. 966	Females.. 518
1319	1946	1046

DEATHS IN DIFFERENT DISTRICTS.

West—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 361,326)	273
North—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 368,503)	415
Central—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,759)	314
East—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 393,247)	371
South—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich .. (Pop. 479,469)	573
Total	1946

CAUSES OF DEATH.

CAUSES OF DEATH.	1946	Av. of 5 Auts.
ALL CAUSES	1946	1046
SPECIFIED CAUSES	1943	1039
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	620	211
<i>Sporadic Diseases, viz.—</i>		
2. Dropsy, Cancer, &c. of uncertain seat	131	104
3. Brain, Spinal Marrow, Nerves, and Senses	178	157
4. Lungs and other Organs of Respiration	657	333
5. Heart and Bloodvessels	52	34
6. Stomach, Liver, and other Organs of Digestion	79	74
7. Diseases of the Kidneys, &c. ..	15	9
8. Childbirth, Diseases of the Uterus, &c.	18	14
9. Rheumatism, Diseases of the Bones, Joints, &c.	14	7
10. Skin, Cellular Tissue, &c.	2	2
11. Old Age	110	65
12. Violence, Privation, Cold, and Intemperance	58	29

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	11	Paralysis	28
Measles	75	Convulsion	46
Scarlatina	36	Bronchitis	234
Whooping-cough	36	Pneumonia	189
Diarrhoea	0	Phthisis	148
Cholera	0	Dis. of Lungs, &c. ..	13
Influenza	970	Teething	11
Typhus	131	Dis. Stomach, &c. ..	5
Dropsy	9	Dis. of Liver, &c. ..	8
Sudden deaths ..	31		
Hydrocephalus ..	33	Childbirth	13
Apoplexy	26	Dis. of Uterus, &c. ..	4

REMARKS.—The total number of deaths was 990 above the weekly autumnal average. Although the mortality is unusually high, it is satisfactory to know that the deaths are not so numerous by 470 as in the preceding week. Zymotic and pulmonary diseases appear to have become less prevalent or less fatal to the metropolitan population.

NOTICES TO CORRESPONDENTS.

Mr. W. Gosse's second communication has been received, and will have early insertion.

Mr. W. Newnham.—The circular has come to hand.

RECEIVED.—Mr. Mills.

LECTURES
ON THE
DISEASES OF INFANCY AND
CHILDHOOD,

Delivered at the Middlesex Hospital.

By CHARLES WEST, M.D.

Physician-Accoucheur to, and Lecturer on Midwifery at, the Middlesex Hospital, and Senior Physician to the Royal Infirmary for Children.

LECTURE XVIII.

Œdema of the lungs—occasionally comes on in course of scarlatinal dropsy—severity of the symptoms, and their sudden accession—Difference between characters of œdematous and hepatized lung—treatment—importance of venesection—occasional exceptions to its use.

Gangrene of the lung—Case illustrative of the disease—is not the result of mere intensity of inflammation—unattended by any pathognomonic symptom.

Pleurisy—its rarity in childhood as an acute uncomplicated idiopathic affection—its symptoms and morbid appearances similar to those observed in the adult—it occasionally simulates other diseases, as affections of the head, and of the abdomen—Evidence of auscultation less conclusive than in the adult, and why.

Treatment—importance of early adoption of active measures—principles of treatment same as in the adult.

Chronic pleurisy—rarely idiopathic—occurs oftener in connection with dropsy after scarlatina—its symptoms frequently obscure.

BEFORE we proceed to the examination of some other forms of inflammatory disease of the respiratory organs, it may be convenient to notice two conditions of the pulmonary tissue, which though not the direct results of inflammation, yet are closely connected with it. One of these conditions is *acute œdema of the lung*; the other is *gangrene of its substance*.

It is unnecessary to occupy your time with any detailed account of that anasarca state of the lungs which is sometimes met with in connection with general dropsy of long standing, or with some old disease of the heart and great vessels. In such cases, which are very rare in childhood, the œdema of the lungs is a secondary affection, which has very little share in producing the patient's death. But it occasionally happens that children are attacked with intense dyspnoea, and other symptoms of disorder of the respiratory organs, which terminate ra-

pidly in death; while it is discovered, on an examination of the body, that the thoracic viscera generally are free from disease, but that the cellular tissue of the lungs is loaded with serous fluid. Laennec* refers to such an accident as probably accounting for the occasional sudden supervention of extreme dyspnoea in children recovering from measles; but a recent French writer, M. Legendre,† was, to the best of my knowledge, the first person who clearly proved the connexion between the symptoms observed during life, and the state of extreme œdema of the pulmonary tissue found after death.

This *œdema of the lungs*, however, though it sometimes destroys life very speedily, is seldom, if ever, a purely idiopathic affection, but occurs generally as one of the complications of that acute anasarca which not unfrequently succeeds to scarlatina, and even then is not of common occurrence. M. Legendre records only four cases, all of which were observed in children who were suffering from anasarca after scarlatina; and three fatal instances of it have come under my own notice, in all of which it came on during scarlatinal dropsy. In two of these cases it came on while the children were labouring under a great degree of anasarca; on the third occasion the dropsy had greatly abated before the thoracic symptoms appeared. Indications of slight mischief in the chest, such as frequent dry cough, some degree of dyspnoea, with rhonchus and sibilus, or scanty crepitation, preceded the more serious symptoms for two or three days. The patient, in short, had seemed to be suffering from a bronchitis of moderate intensity, when suddenly extreme difficulty of respiration supervened, attended with very hurried breathing, orthopnea, and most tumultuous and violent action of the heart, though with a feeble pulse. The cough continued, being still short, and quite unaccompanied with expectoration. Auscultation under such circumstances does not seem to give account of mischief sufficiently serious to explain the alarming nature of the symptoms. It may be thought that air enters the lungs less freely than it should do, but the crepitation heard is scanty, and neither bronchial respiration nor diminished resonance on percussion of the chest is perceptible. Nevertheless, if relief be not soon afforded, the child's sufferings in a few hours amount to perfect agony, the difficulty of respiration and the tumultuous action of the heart continuing; the lips and face becoming perfectly livid, but the intellect remaining clear, and the child complaining of great distress referred to the heart or epigastrium; till at

* On the Diseases of the Chest, translated by Dr. Forbes. 4th ed. London, 1834. p. 164.

† Recherches sur quelques Maladies de l'Enfance. 8vo. Paris, 1846. p. 324-352.

length death takes place suddenly, which it sometimes does within twenty-four hours from the appearance of these alarming symptoms. At other times the approach of the disease is more gradual, the dyspnoea being augmented in paroxysms, but on the whole increasing with the increase of the general anasarca, and proving fatal in the course of five or six days.

On examining after death the bodies of children who have died of this acute oedema of the lungs, a little transparent serum is usually found in the chest, and a few deposits of lymph on the surface of the lung sometimes betoken the existence of slight inflammation of the pleura. The lungs themselves are of a deep red colour, firm, and destitute of air through a great extent of their substance, not breaking down so easily as lung in a state of true hepatization would do, but giving exit when cut into to a most abundant quantity of reddish serum, mixed with very few air-bubbles. The right auricle and ventricle are enormously distended with coagulated blood, a token of the difficulty with which the heart has discharged the functions to the performance of which it at length became wholly unequal. To this description two important points may be added from the account given by M. Legendre; the one that punctures of the lung will allow the fluid to drain out, and thus restore to the organ much of its previous flaccidity; the other, that by the insufflation of air, the tissue of the lung may be made to resume its natural suppleness and its light colour, and once more to crepitate as in a state of health. From these facts M. Legendre concludes, and his opinion is, I doubt not, quite correct, that the cellular tissue of the lung is in these cases the chief seat of the serous effusion, and that dyspnoea is produced by the consequent compression of the air-cells.

In the treatment of any case in which the symptoms just enumerated come on, free venesection affords most remarkable and almost immediate relief, and whenever it is practicable is much to be preferred to the most abundant depletion by means of leeches applied to the neighbourhood of the heart. After depletion, large doses of tartar emetic should be given, since there is no other remedy that so speedily or effectually reduces the urgent dyspnoea. In the subsequent management of the case just such remedies are required as would be best calculated to relieve the general dropsy, and as that diminishes, the oedema of the lungs will likewise diminish and disappear.

Sometimes you may meet with cases in which the coldness of the extremities and the great lividity of the surface seem to forbid depletion. Such an instance I once saw:—the patient was a little girl about 9 years old,

in whom all the symptoms had come on very suddenly a few hours before I saw her, and who appeared almost dying at the time of my visit. I applied a large mustard-poultice over her chest, gave her a draught containing a large dose of nitrous ether, and repeated it every two hours. In the course of eight or ten hours, she was sufficiently rallied to bear venesection, which was followed by most marked amendment, and in a few days her recovery was complete.

My experience of *gangrene of the lung* in childhood is still more limited than of the acute oedema of its tissue, for only one case of it has come under my notice. The particulars of it, however, may be worth relating, since they illustrate very well the symptoms which the disease usually presents, and the circumstances under which it generally occurs.

A little girl, 3 years old, the child of healthy parents, and having previously had good health, with the exception of a severe attack of inflammation of the lungs when 2 years old, began to droop in health, to cough, and to have shortness of breath, on the 11th of February, 1843. No treatment was adopted until the child was brought to me on the 15th. Her breathing was then more oppressed, her general condition more cast down, and her strength more reduced than is usual in so short a time from the commencement of an attack of pneumonia which had not set in with very severe symptoms. Four leeches were applied beneath the right scapula, and half-grain doses of calomel and Dover's powder were given every three hours. Slight relief succeeded the bleeding, but this was of but short duration; and the child did not seem to be either better or seriously worse until the 19th, when she appeared to be losing strength. The mercury was now discontinued, and ammonia and nourishing diet were freely given. On the 20th, the gums both of the upper and lower jaw began to swell, by the next day they were ulcerated; the breath became very fetid, and a discoloured stinking fluid ran from the mouth. The thoracic symptoms continued much the same, not at all increasing in intensity, and the cough growing looser than before; but the child became paler and more exsanguine, and continued to lose power. The ulceration of the gums extended to the fold of the lower lip, and three of the incisor teeth fell out before the disease was finally checked on Feb. 26th by the application of the pure nitric acid. The child did not appear to suffer pain, but was very restless, and continually harassed by efforts to vomit, during which she rejected nothing but an offensive mucus. She was extremely indisposed to take either wine or any nourishment for four days before her death, which took place.

apparently from exhaustion on the 1st of March, nineteen days after the commencement of her illness.

On an examination of the body after death, the left lung was found perfectly healthy, with the exception of some emphysema of its upper, and considerable congestion of its lower lobe.

The right lung, which consisted of only two lobes, was universally solid and non-crepitant, with the exception of about a fourth of the upper and inner edge of the upper lobe, which was emphysematous. The two lobes were connected together by a layer of yellow lymph. The exterior of the lung generally was of a dark greyish red colour, with irregular patches of yellow deposit beneath the pleura, some of which were nearly half an inch in length and a quarter in breadth, besides which many small purulent deposits were contained within the pulmonary vesicles, as in vesicular bronchitis. The upper part of the upper lobe, and a small portion near the diaphragmatic surface of the lower lobe, felt soft and boggy to the touch. On cutting into the upper lobe, a cavity was opened as large as a hen's egg, very irregular in form, intersected in various directions by the tubes and vessels which crossed it; from which, as well as from the walls of the cavity, portions of lung hung in shreds. The cavity contained a small quantity of dirty greyish yellow purrilage, which exhaled a most foetid odour. The substance of the lung in the immediate neighbourhood was in a far advanced stage of purulent infiltration, and other parts of the lobe were in an earlier stage of the same condition, besides which, small collections of puriform fluid, not bigger than a split pea, were found in various parts of its substance. The state of the lower lobe on the whole resembled that of the upper, but the cavity in its lower part was not larger than a marble, and contained a small quantity of yellow pus, of a less foetid character than that in the upper lobe. The bronchial glands were swollen, soft, of a homogeneous aspect, and a grey colour; but neither in them, nor in either lung, nor in any organ of the body, was there the least trace of tubercular deposit.

Although there was in this instance a larger amount of inflammatory disorganization of the lung than is usually met with in connection with gangrene of its substance, yet the symptoms observed during the patient's life-time were precisely such as are generally observed in cases of this description. The child was attacked with symptoms of pneumonia, which, however, were far from being severe; but nevertheless, by the fifth day from their commencement, the greater part of the right lung had become impervious to air, and percussion over the

right side of the chest on the 15th of February yielded an almost universally dull sound. Even then the child's strength seemed much reduced, and in the course of a few days more she sank into a state of great weakness. Throughout the whole course of the disease there was the same absence of striking indications of the extent to which the respiratory organs had suffered, and this even after a large portion of the lung was completely disorganized. The most remarkable phenomena were those which betokened the general loss of power in the system, while the appearance of gangrenous ulceration about the gums tended to prove the correctness of the opinion which refers the disease to some peculiar alteration of the circulating fluid, rather than to the violence of the inflammatory action. Another circumstance which tends to support this opinion is, that gangrene of the lung much more frequently supervenes on the pneumonia that comes on in the course of the exanthematous fevers, than on idiopathic inflammation of the lungs. The disease, too, occurs far more rarely in children who are well fed, and who live in pure air, than in those who are surrounded by unfavourable hygienic conditions. Hence it results that this, as well as other forms of gangrene, are met with in the Children's Hospital at Paris with far greater frequency than elsewhere, and that they sometimes show a tendency to become endemic in that institution.

There is no one symptom that can be mentioned as of constant occurrence in gangrene of the lung in children, and as pathognomonic of the disease. That peculiar foetor of the breath, on which so much reliance is laid in the adult, sometimes loses its value in the child, as it did in the case just related, by the co-existence with it of gangrene of the mouth. It happens, too, not unfrequently, that the characteristic odour of the breath is altogether absent in cases of gangrene of the lung,—a circumstance for which it is not easy to account, though of the fact there can be no doubt, since it rests on the authority of MM. Rilliet and Barthez.

Should you meet with any case in which you apprehend that this condition of the lung is present, you would adopt a tonic and stimulant plan of treatment, as affording the only chance, and that a very slender one, of saving the patient's life. Dr. Stokes's suggestion, too, for the administration of chlorine, should not be forgotten, since, if the remedy did nothing else, it might diminish that foetor of the breath which, when it exists, is a source of very great suffering to the patient.

We pass now from the examination of the inflammatory affections of the substance of the lung to the study of those to which its investing membrane is liable. It will

not, however, be necessary to occupy very much of your time with the subject of *Pleurisy* in childhood, since, though it is a very important disease, yet neither its symptoms, course, nor treatment, undergo such modifications from the early age of the patient as we have observed in some other of those affections which we have already passed in review. Some writers on the diseases of children, indeed, have left pleurisy altogether unnoticed, on account of its supposed extreme rarity in early life; but this opinion is certainly erroneous so far as regards that secondary pleurisy which comes on in the course of pneumonia, and which is almost, if not quite, as frequent in childhood as in adult age. Acute idiopathic pleurisy, unconnected with pneumonia, or in which the inflammation of the lung bears but a very small proportion to that of the pleura, is certainly an uncommon affection during the first years of childhood, and as a cause of death its rarity is extreme. It appears from the fifth report of the Registrar-General, that, of 75 fatal cases of pleurisy that occurred in London in the year 1841, only 3, or 4 per cent., took place in children under 5 years old; while you will not have forgotten that 68 per cent. of all fatal cases of pneumonia are alleged on the same authority to have befallen children aged less than 5 years. Acute idiopathic pleurisy has run a fatal course in children under 5 years of age only on four occasions which I have had the opportunity of observing,—a result which has seemed to be due at least as much to the rarity of the disease as to its being seldom fatal. After 5 years of age, however, the frequency of pleurisy manifestly increases, and during the later years of childhood it is little, if at all, less frequent than in the adult.

In fatal cases of pleurisy in childhood the *appearances found after death* are precisely the same as are met with in the adult. Adhesions between the costal and pulmonary pleura, and between the different lobes of one or other lung, associated sometimes with very intense redness of parts of the membrane, are hardly ever wanting, and in connexion with them a small quantity of transparent serum, often of a reddish tint, is sometimes effused into the cavity of the chest. In other cases the effused matters are entirely solid, and both the surface of the lung and the interior of the thorax are coated with a distinct investment of lymph, or, in addition to the deposit of lymph on the lung, fluid is poured out into the chest, no longer transparent serum, but either a sero-purulent fluid in which flakes of lymph are floating, or, more rarely, the matter effused is healthy pus. The most frequent complication of pleurisy is with inflammation of the lungs; besides which it occasion-

ally happens, when the left pleura has been the seat of inflammation, that the disease extends from it to the pericardium, which on two such occasions I have found lined with lymph, partially adherent to the heart, and containing a sero-purulent fluid.

The main *symptoms* that attend the disease, as well as the *physical signs* of its existence, are the same at all ages. There are, however, some circumstances peculiar to early life, which, unless you are on your guard, may serve to obscure the real nature of the affection. The history of a case of acute pleurisy in childhood is generally something to this effect:—A child previously in perfect health is suddenly attacked with pain referred to the chest or upper part of the abdomen, so severe as to occasion it to cry aloud, perhaps attended at first with vomiting of a greenish fluid, accompanied with fever, a rapid pulse, and hurried respiration, interrupted by frequent short cough, which evidently occasions pain, and which the child labours, though in vain, to suppress. After a few hours the severity of the pain subsides; but the fever, hurried respiration, and cough, continue, and the child, though usually it looks heavy and seems drowsy, yet becomes extremely restless at intervals,—cries and struggles, as if in pain, and violently resists any attempt to alter its position, since every movement brings on an exacerbation of its sufferings. The posture which it selects varies much; sometimes its breath seems disturbed in any other than an upright position; at other times it lies on his back, or on one side; but, whatever be the posture, any alteration of it appears to cause much distress, and is sure to be resisted by the patient.

The probabilities are, that, if you auscultate the chest of a child in whom these symptoms exist, you will hear good breathing through the whole of one lung. On the other side, the air will be most likely found to enter less freely, though unaccompanied with any moist sound, perhaps unattended with any morbid sound at all; or there may be on this side a rough sound audible like a rhonchus, and for this you may very likely at first take it, though with more attention, it will be discovered to be a friction sound. A day or two later you will probably detect a sound like that of bronchial breathing, as you pass your ear from above downwards along the posterior part of the chest, while the friction sound will have disappeared, and still lower there will be an utter absence of all sound. The walls of this side of the chest, if their tenderness does not prevent your trying percussion, will yield a much less resonant sound than usual; while, at the same time, a distinct sense of solidity will be communicated to the finger.

I need hardly pursue the detail of other

symptoms which are the necessary result of pleurisy, whatever be the age of the person in whom it occurs. The diminished mobility of the affected side, the displacement of the heart, the bulging of the intercostal spaces, and the enlargement of the chest on the diseased side, are phenomena that take place under the influence of the same causes at every age, though their occurrence is less frequent in childhood than in adult age, since the effusion of fluid is usually more scanty. The course of the disease, whether towards recovery or to a fatal issue, presents nothing remarkable in childhood, but it is chiefly at the commencement of the disease that you are likely to mistake its nature.

The symptoms by which an attack of pleurisy is ushered in, point sometimes rather to the head than to the chest. The child is seized with vomiting, attended with fever and intense headache: it either cries aloud, or is delirious at night, or screams much in its sleep, and, when morning comes, complains much of its head, but denies having any pain whatever in its chest, while the short cough and the hurried breathing may be thought to be merely the result of the cerebral disturbance. The diagnosis of cases of this kind is sometimes very difficult, since auscultation does not always afford the information that you might expect. It often happens that no friction sound is perceptible, and that you have no other indication to guide you aright besides the feebleness of the respiratory murmur on the affected side. The child, too, fearful to take a deep inspiration, fills neither lung completely, so that to a great degree you lose the information gained by the comparison of the breathing in one lung with that in the other. Still, the history of the case will do much towards preserving you from error. The onset of the illness has been far too acute, attended with far too much febrile disturbance, for a case of tubercular hydrocephalus, while many of the signs of cerebral mischief which might be expected in a case of simple encephalitis have not presented themselves. The heat of head is not greater than that of the rest of the surface; the cries with which the disease set in have not ended in coma. It happens but seldom that convulsions mark the commencement of the disease; but, if they had occurred at the onset, they have not since returned; neither twitching of the muscles, nor strabismus, nor retraction of the head, is present; and, though the child may cry, as children when ill and fretful often do, at the curtain being undrawn and the candle brought near it, yet there is no real intolerance of light. The dyspnoea also is too permanent, and the short hacking cough too frequent, for either to be sympathetic of cerebral disorder.

The pain with which pleurisy sets in is

sometimes referred not to the chest, but to the abdomen, and its commencement may be attended with vomiting and purging. Pressure on the abdomen, too, often causes a considerable increase of suffering, and you may thus be led to regard the case not as pleurisy, but as intestinal disorder, with fever. In any such doubtful case it is well to bear in mind that children, long after they can talk, describe the nature and seat of their sufferings very inaccurately; and if, as often happens in these cases, they refer the pain to the right hypochondrium, you should not forget that pain in that situation is at all ages much oftener connected with disease of the pleura than of the peritoneum; and, lastly, that the increase of discomfort produced by pressure on the abdomen may have been due to the additional impediment thereby offered to the already labouring respiration.

In most cases of pleurisy in childhood, careful auscultation will preserve us from error. Still the information that it yields is more limited in the child than in adult age. The evidence afforded by the various modifications of the voice sound are much less marked owing to the feebleness of the voice in early life, while we cannot induce the child to speak several sentences or utter several words in the same pitch of voice, in order that we may try how far the sound is altered. For the same reason, too, we cannot test the difference between the two lungs by the vibration of the voice perceived on applying the hands to either side of the chest—a means by which, in the adult, we are often assisted in determining between a solidification of the lung from pneumonia and the dullness consequent on pleurisy with effusion. Another circumstance which, in the child, increases the difficulty of distinguishing between pleurisy and pneumonia, is, that, in the latter, children sometimes inspire so slightly as not to produce any crepitation, so that in both cases we may have impaired resonance on percussion, with scanty admission of air, and a bronchial character in the respiration, but without any other morbid sound. In the child, too, we lose the very valuable information which the presence of the expectoration in the pneumonia of grown persons affords, when contrasted with the absence of all expectoration as an attendant on the dry cough of pleurisy. With the advance of the disease, doubt as to its nature is removed; it is at its commencement only that mistake is possible. But even then, and in spite of all the circumstances which have been enumerated as tending to mislead, you will seldom be wrong if you regard as an instance of pleurisy any case in which symptoms like those of pneumonia having set in suddenly and severely, auscultation fails to

detect the crepitus of pneumonia, and discovers only feebleness of the respiratory murmur on one side, with or without a more or less marked bronchial character in the breathing.

But we may pass now to the consideration of the *treatment* of acute pleurisy in childhood, a subject which need not detain us long, since the age of the patient in no respect alters the principles that must guide our conduct. If seen sufficiently early, and treated with due activity, cases of acute pleurisy in infancy and childhood nearly always have a favourable termination, and in almost every instance that has come under my observation in which the issue of the disease was unfortunate, either all treatment had been neglected till the children were past hope, or the nature of the complaint had been mistaken, or the treatment followed had not been sufficiently active. This last error it is of great moment to avoid, for acute inflammation of the pleura in childhood runs its course with greater rapidity to a more speedy fatal issue than in the adult. Of seven fatal cases of acute pleurisy in childhood, of which I have preserved a record, three ended in death on the 6th day, one on the 9th, one within a fortnight; while one of the remaining two terminated in thirty days, and the life of the child in the seventh case was prolonged for several months.

In almost every case, provided the symptoms be at all urgent, and the child's previous health have been good, general depletion should be resorted to, and you need not be afraid of carrying this first bleeding to syncope, since children generally faint after the abstraction of a comparatively small quantity of blood from the arm. It will be almost always necessary to follow this up by local bleeding, but it is desirable to wait for three or four hours in order that you may be enabled to estimate the effect produced by the previous venesection. A second bleeding from the arm is seldom needed, and may almost always be avoided if local depletion be not too timorously practised. In the acute stage of pleurisy it is better to draw the blood by leeches than by cupping, since the side is often so tender that the pressure of cupping glasses would be unbearable. After depletion our chief reliance is to be placed on calomel, which should be freely given in combination with opium or Dover's powder. Antimony, which often renders us such good service in pneumonia, is here of little use; and though it may somewhat diminish the frequency of the breathing, it exerts little or no influence upon the local mischief. A pleurisy treated thus actively is sometimes overcome in the course of 24 or 48 hours, so that nothing remains of symptoms which had appeared

so formidable. Often, however, after the acute symptoms have subsided, the affected side remains dull, and the respiration scanty for several weeks together, and now is the time when the use of blisters, associated with the exhibition of small doses of calomel, will be of most essential service, and will generally effect the complete absorption of the fluid, and the restoration of the patient to perfect health.

This, however, is not always the case, but, sometimes in spite of remedies perseveringly employed, one side of the chest continues full of fluid; and the question then comes before us whether it will not be expedient to let out that fluid by mechanical means. Many most important considerations are, as you know, involved in the question of performing paracentesis of the chest; but the indications for its performances are the same in the child as in the adult: while my own experience would lead me to conclude that cases in which the operation is necessary are of very rare occurrence in early life.

Pleurisy does not always present itself as an idiopathic affection. It supervenes, as we have already noticed, in the course of pneumonia, increasing the suffering of the patient, and, if severe, adding much to his danger. It comes on, sometimes during acute rheumatism, either with or without pericarditis, and on two occasions I have observed pleurisy, with effusion into one side of the chest, succeed to an attack of peritonitis. But besides these cases in which the affection of the pleura retains an acute character, the disease is likewise met with in a chronic form, and manifesting its existence by comparatively few symptoms. Attacks of *chronic pleurisy* are sometimes idiopathic; and it is not always possible to trace them back to their commencement in an acute seizure. The cough and dyspnoea in such cases are troublesome rather than distressing, and nothing but examination of the chest would lead to a suspicion of the serious nature of the affection. Cases of this description usually do well under the employment of local counter-irritation and the administration of mercury and diuretics, though the absorption of the fluid is usually effected very gradually. Chronic pleurisy, however, is a very rare occurrence, as a purely idiopathic affection, in early life, but it is one of the most important, and far from being one of the least common complications of the drosy which often succeeds to scarlatina. Under these circumstances, too, it often needs much attention to detect it, since it may for a long time give rise to but few symptoms that might betray its existence. Some cough and some dyspnoea almost invariably attend the anasarca that succeeds scarlatina, and often there is no complaint of pain, nor increase of the cough,

nor exaggeration of the dyspnoea, to betoken the onset of this new and formidable disease. At length, perhaps, the anasarca disappears, and now when we notice the emaciated condition of the child, we observe for the first time that one half of the chest is much larger than the other, that it remains immoveable during respiration, and we discover that it is full of fluid. Or our attention may be suddenly called to the mischief that has been going on by the child becoming unable to breathe except in one posture, and even then with extreme difficulty; the fluid has been poured out so abundantly as at length almost to prevent respiration, and when we find out the evil it is almost too late to effect its cure.

It is by the adoption of a vigorous antiphlogistic treatment in the dropsy that follows scarlatina that you will be most likely to prevent the supervention of this serious malady; it is only by the most attentive daily auscultation that you will in many cases get notice of its approach.

Original Communications.

MISCELLANEA MEDICA.

By ROBERT DICK, M.D.

PART V.

[Continued from page 1105.]

26. *Cholera*.—That cholera is not propagated chiefly, or at all, by means of an animal virus (as Mr. Herapath, of Bristol, has lately sought to shew) seems probable from the fact, that no greater mortality, in proportion, occurred among medical men and nurses than among those whom circumstances permitted and fear induced to use every precaution against infection from the sick. All the benefit alleged by Mr. Herapath to have been derived from chlorine gas are accountable, not merely on the supposition that it destroyed the virus of cholera, but that it decomposed the various animal effluvia incident to uncleanly and ill-ventilated apartments, and which, by predisposing to disease in general, predisposed, of course, to cholera. But it is unphilosophical, where we have known and familiar agents to explain by, to admit an unknown one, that is, a cholera virus, the existence of which is purely conjectural.

A disease attended with an infectious

animal virus wanders hither and thither according as greater or less sanitary precautions are used in this or that country, district, or dwelling-house. This was not the case with cholera.

It seems to me that the progress of cholera, so chronic and so regular, advancing steadily as it did and does during several years, from a remote part of the continent of Asia, across that of Europe, and over the Atlantic to America, must depend on either atmospherical, electrical, or geological influences. It would be well that naturalists and medical men of different countries should, either now, or on the earliest announcement of any future rise of cholera in the East, attend:

1st. To keep an accurate, and, if possible, daily register of thermometrical changes.

2d. Of hygrometrical ditto; whether the season or seasons have been dry or moist.

3d. Of electrical ditto; whether thunder-storms, &c. have been more or less frequent.

4th. Should inquire or observe whether, in the line of march of the disease, or elsewhere, there have been any volcanic phenomena—any increased activity in existing volcanos, &c.

5th. Whether there has been any general blight of vegetation.

It is far from improbable that the craters of volcanos are not the only points from which effluvia, dangerous or fatal to animal and vegetable life, find vent. A very small way below the crust we live on, the most violent volcanic actions are still going on, and a state of heat and probably combustion existing of which we can scarcely form any idea. About as far *below* the mean surface of the earth as the summit of the Himalaya is *above* it, a degree of heat must exist which ought to keep granite in fusion! Now, all this cannot but be attended with the extrication of gases and vapours. It is possible that *besides* those which escape by craters, others must ooze, as it were, through the soil, must *percolate upwards* (if I may be allowed the phrase) blighting vegetable, and poisoning animal life, along extensive tracks of the earth's surface. Hence the reason of my suggestion that the condition of the vegetable kingdom should receive attention.

6th. Whether there has been any

murrain among any of the animals which furnish a staple article of human food, as oxen, sheep, fowls, tame and wild, &c.; or any disease among any of the articles in the vegetable kingdom which are of staple use, as, for example, rice, wheat, barley, &c. It is conceivable, in cases of general murrain among animals, and blight among vegetables for food, that besides those of either kind which perish, many may be more or less affected with the disease, or debilitated and rendered less healthy by the influences to which the disease is owing without death taking place. Hence they may, though *seemingly* in health, be unfit for food for man, though they continue to be used as such. Hay-fever, and the disorders arising from the use of ergotted rye, the stomachic and intestinal derangements caused by the use of many fish seemingly healthy, will suggest themselves to the reader in connexion with the subject of the query of this paragraph.

The observation of marine phenomena is less easy, and the information thence to be derived less accessible. Yet no doubt volcanic actions take place as extensively under the bed of the sea as under dry land, with concomitant discharges of deleterious vapours and gases. By these a vast destruction of the inhabitants of the sea is caused (as has been sometimes observed) over many leagues. Immense tracts of the sea's surface have also been observed covered with floating submarine plants, detached either by some convulsion, or by some other cause, from their places of growth. Surgeons at sea, naval officers, &c. should carefully record all such phenomena.

The causes of cholera are obviously of a very permanent and determinate kind, and operate from east to west. That the causes are situated in the atmosphere alone is not probable, or rather is not possible; for if so, so moveable a body is the atmosphere, so full of currents is it, that cholera, if derived thence, would have been distributed over the earth with much more geographical variety and latitude than we have seen it to be. The only causes by which its permanent duration, or regular return during several years, and its determinate course from east to west, can well be accounted for,

are some peculiar solar, lunar, or some terrestrial or subterranean influence, or some electrical changes dependent on the sun's progress from east to west, or on some terrestrial causes operating in that direction.

That there are changes—atmospheric, solar, or other changes, which baffle our comprehension—in the earth's axis, or in its position to the sun, is proved by the singular fact, that now a *twilight* is observable in the east and west of the continent of India, which did not formerly exist; and that this twilight is gradually increasing in length and distinctness.

27. *Exercise.*—In his remarks on the treatment of one form of renal disease, Dr. Prout, after referring to horse and carriage exercise, and some disadvantages attending the latter, observes: "On the whole, if the patient has the use of his limbs, walking, perhaps, constitutes the best form of exercise."

If this remark is just (and it is so) in regard to the great majority of cases of disease, it is emphatically so as respects the condition of health, and with a view to the preservation of that condition. It were easy to point out the advantages of walking exercise over horse-riding. Its superiority to carriage exercise is too obvious to even unprofessional persons to require illustration. Two out of the twelve or sixteen waking hours are the least number that, on the average, should be occupied in walking exercise. After, not before, exclusively, not inclusively, from one to five hours may be given to horse or carriage exercise. We should never lose an opportunity of contrasting the wisdom of the arrangements of nature and providence, with the prejudices and errors of society. The possession and use of a carriage is usually considered a privilege: and those who enjoy them enviable persons. Reason and experience pronounce a contrary verdict. What a mass of diseases, connected with plethora, is unequivocally and directly due to the use of carriages! Gout, hepatic and cerebral congestions, need only be named; but, in truth, the number is legion. Then what a further amount of disease, or disposition to disease, is induced, by the artificial protection from the animating influence of open atmospheric air, which close carriages furnish, and the in-

ability they induce to bear, without depression or subsequent febrile reaction, natural cold? How many cases of pulmonary catarrh, congestion and tubercle; of intestinal catarrh (diarrhoea), and intestinal irritation, are thus caused? Such being the case, may we not on this, as on a thousand other occasions, ask whether nature, justly interpreted, is not kinder to the poor than to the rich? It may be answered that the above objections apply to the abuse, not the use, of carriage exercise. To this we would reply that, as even the incessant toil of a daily labouring man is *not found to be inconsistent with the highest health*, if he is adequately supplied with food, therefore any use of carriages at all is unnecessary as *modes of exercise*, though for rapid locomotion, for the dispatch of business, and for states of disease, this kind of gestation may be occasionally required.

28. *Phrenological explanation of Gluttony.*—Dr. Pereira, in his Treatise on Food and Diet, observes:—"Instead of ascribing the gluttony of the inhabitants of frozen regions solely to the low temperature to which they are exposed, I consider it to be in part the result of an instinct or propensity, exercised by some portion of the brain. Phrenologists place alimentiveness, or the origin of the propensity to eat and drink, at the base of the middle lobe of the brain, adjoining and immediately below the situation occupied by the organ of destructiveness in carnivorous animals." (Combe.) "But," continues Dr. Pereira, "while I entertain no doubt of the existence of such a propensity, I do not wish to offer any opinion as to the precise seat of it within the skull. To varying degrees in the power and activity of this organ, I ascribe the greater or less fondness for good living evinced by different individuals."—(p. 18.)

We must own that we think there is not a little doubtful speculation both in the above conjecture of Dr. Pereira and in the statement of Mr. Combe. In the first place, and without entering into a formal discussion on phrenology, allow me to put the simple question—is it philosophical to assume the existence or necessity of an organ of alimentiveness, when acephalous animals aliment themselves equally

and as well as cephalous? This single fact we regard as a sufficient answer to the whole phrenological argument. But we would add one or two additional observations. It is a rule admitted in all argument that aims at any precision, never to recognise or suppose a second or more causes, especially if these are disputable, when one, known and obvious, is sufficient to explain any phenomena. Now, without requiring to have recourse to phrenology, there are surely simple and recognised modes of explaining varying degrees of appetite. Without reference to the brain at all, the state of the stomach and other circumstances satisfactorily account for these. For example, great exercise creates, in most cases, increased craving for food. Surely this is a cause that does not specially act on the brain or on any part of it. The whole feeling of craving is in the stomach. We have no more consciousness of any physiological inconvenience in the brain than in the great toe. What boldness, then, and gratuitousness of hypothesis, to look beyond the organ palpably affected to one remote, that betrays no signs of suffering whatever,—except, it may be, of that general exhaustion, in which every other member and organ of the body equally participate.

In short, we shall find almost every case, whether of individual or national gluttony, accountable on grounds much less problematical than those of an organ of alimentiveness, in an exalted degree of "power and activity." Mere habit and use have a great influence. Under the same climate, and in the same circumstances in which a civilised man moderately uses food, savages indulge in gluttonous meals. But who would seek for the explanation of this difference in an organ of alimentiveness?

Dr. Pereira then quotes a quotation of Mr. Combe from Dr. Vimont, to prove the great difference in the degree of the power and activity of the organ of alimentiveness in different nations. By this it would appear that the Germans are great eaters of flesh—greater than the French (which, however, is open to question): hence, they possess the organ of alimentiveness in a higher degree. No mention is made in the quotation of the English: but as they are the largest eaters

of flesh in Europe, hence this nation must have a great development of the base of the middle lobe of the brain! Now, all this appears to us extremely fanciful. This gregarious development of a certain alimentive organ of the brain seems to us to require far more stringent reasoning and proofs to induce us to put faith in its existence. The Americans are greater eaters of flesh, and larger eaters, than any European nation.* Why? Simply because food is at once plentiful and cheap in that country: or rather, the means of procuring it abound. Shall we say that the habit of using animal food three times a day, as is common with the farmers, labourers, &c. of many parts of the United States, is not more plausibly due to the accident of cheap food and good wages, than to superior power and activity in a conjectural organ of alimentiveness?

In conclusion, we regard the sensation of hunger and all the varieties of appetite, whether moderate or gluttonous, as originating and terminating in the stomach. If the organ has any connexion with or dependence on the cerebrum, we conceive it to be of a nature not understood, but, at all events, entirely distinct from the causes and provisions on which the sensation of hunger and appetite depends. What we mean is, that, if we could conceive the life, functions, and sensations of the trunk, to continue after decapitation, we believe that the sensation of hunger would be experienced in the stomach just as it is in the ordinary circumstances, though it would no longer, of course, be a subject of *perceptive* or intellectual recognition.

A man has only to make his own sensations the subject of observation to be satisfied that the appetite of hunger has no connexion with the brain, except as a subject of consciousness and intellectual perception, in exactly the same way as the mind

is conscious of and perceives a pressure exerted on the hand or foot.

29. *Leguminous seeds.* — Repeated observation has satisfied us that Liebig's theoretical notion (for it is merely theoretical), that beans and peas, though abounding in nitrogen, are comparatively deficient in nutritive properties, is at complete variance with fact. His idea of their inferior nutrient power is founded on their possessing a less proportion than wheat, for example, of the subphosphate of lime and magnesia, which contribute to the formation of bone. But it seems very possible that an article of diet, if abounding in nitrogen, may be highly nutritive, though comparatively deficient in the above salts. When we speak of any particular sort of food as being peculiarly nourishing for an *adult*, we understand rather that which develops the muscles, than what is supposed or expected to enlarge the bones. Absorption and deposition in these are extremely chronic processes; and to maintain the bones in their *statu quo* of volume, an extremely small and gradual supply of the subphosphate of lime and magnesia is needed. Whether a man, subsisting wholly and *exclusively* for months or years on leguminous seeds, might not eventually have his osseous system atrophied or softened, may be a question: but we do not believe that Liebig's allegation is founded on any such protracted observations, but is merely a speculative case and *a priori* supposition.

To that *supposition* the writer would oppose his own repeated and careful observations in cases of muscular debility, in which he has seen the use of beans and peas, boiled entire (*haricot*), or in the form of soups, pudding, &c. of great and unequivocal benefit. (See also preceding notice, No. 15.)

Bentinck Street, Manchester Square.

NOTE ON THE TYPHLOSOLE OF THE EARTH-WORM.

By C. HANDFIELD JONES, M.B.

IN the intestine of the earth-worm there is found a peculiar structure, which bears the name of typhlosole, (blind tube); it commences just behind the gizzard, and extends nearly as far as the vent, diminishing in size

* At Boston, Mr. Buckingham informs us, (and we presume the same habits prevail generally in the United States), "there are four substantial meals in almost every house daily. . . . at each of these, flesh, meat, or poultry is taken — grossly cooked, with greasy sauces, and a large admixture of sweetmeats and preserved fruits, as well as a great variety of nuts; of which both children and adults eat profusely."—*Buckingham's America*, vol. iii. pp. 434-5.

as it approaches that opening. This tube is plicated on its surface, to admit of the elongation to which it must be continually subjected during the movements of the animal; it is attached in its whole length to the upper (dorsal) part of the intestinal cylinder, and is closed at either end. Thus far this structure has been described by Professor Owen and others, but I do not find mentioned, what is yet easily demonstrable, viz., that the typhlosole is lined by a stratum of biliary cells, exactly the same in almost every respect as those which lie on the exterior of the intestine, and which, I believe, have no connection by continuity of enveloping membrane with the mucous lining of the intestinal canal. The biliary layer ensheathing the intestine is continuous with that in the typhlosole, so that this structure almost appears to be an inflection of the intestinal wall, something analogous to a "valvula connivens;" this arrangement will be best understood by a glance at the annexed diagram. I may further mention, that the free surface of the typhlosole may be sometimes seen to be covered with cilia in very active play; these organs may also be detected on other parts of the intestinal mucous surface; but I have by no means been able always to perceive them, whether from some change in the condition of the epithelium connected with its function, or because the water in which the specimen was immersed disarranged by its endosmotic action the delicate adjustment of their structure. The function of the typhlosole is probably that attributed to it by Professor Owen, viz., to strain off the chyle from the coarse contents of the intestine; the presence, however, of biliary cells in this situation renders it further probable that it is not until the chyle has permeated the intestinal wall that it is subjected to the influence of what has been deemed the chylic secretion.

Dec. 1847.

MEETINGS OF MEDICAL SOCIETIES APPOINTED FOR THE ENSUING WEEK.

Westminster	Sat. Jan. 1st, 8 P.M.
Pathological	Mon. " 3d, "
Medical	" " " "
South London	Thur. " 6, "

MEDICAL GAZETTE.

FRIDAY, DEC. 31, 1847.

WE have received a circular from Dr. Duesbury, in reference to some remarks on the plea of insanity recently put forward as a defence in the case of the boy Allnutt, who destroyed his grandfather by poison. We have read with some attention the evidence in the case,—the summing up of the judge, the remarks in the *Times*, with Dr. Duesbury's reply;—and the only conclusion at which we can arrive is, that there was an entire want of evidence to show that the boy was in such a state of insanity as to justify his acquittal on this plea. We can find no proof that the alleged *moral* insanity had advanced so far as to affect the intellect of the prisoner; and if insanity of the moral feelings alone is to exculpate, where is the individual who destroys another by poison, who can be justly convicted! Crime must be suppressed—society must be protected; but neither of these results can be obtained, if a plea of insanity is to be lightly admitted. Can the *moral feelings* of any person who secretly assassinates a near relative by poison, be said to be in a *sane state*? If so, let us have a clear and unambiguous distinction between such a case and that of the boy Allnutt. If not, then poisoning, perpetrated under these circumstances, is *not a crime*; and every individual put on his trial for this supposed offence against society, should be at once acquitted on the plea of insanity.

The ultra-advocates of this plea are, we conceive, bound to adopt one or the other alternative. They must prove, to the satisfaction of those who administer the law, that there are clear and unequivocal reasons for adopting such

a plea in a particular instance; and that these reasons are not so loose and undefined as to involve the consequence that all persons who shall hereafter be accused of a similar crime, may easily escape under the same plea. We commend to the notice of those who are interested in this question the excellent papers on the subject, published on various occasions in this journal by Dr Mayo.*

Some advocates of the plea of insanity consider that every crime is the result of *cerebral disease*, and that the criminal act arises in all cases from "an uncontrollable impulse." This is a most dangerous doctrine, which we perceive is daily acquiring strength by the most injudicious attempts to force the plea of insanity, in every case in which the crime happens to be of a particularly atrocious nature.

In completing, with the present number, the fortieth volume of the LONDON MEDICAL GAZETTE, we propose, according to custom, to offer a few remarks to our readers.

The *Lecture department*, in addition to the courses of Mr. Bransby Cooper and Dr. West, includes valuable lectures on Clinical Surgery and Pathology by Mr. Lawrence, Mr. Cæsar Hawkins, and Mr. Paget, as well as on Ophthalmic Surgery, by Mr. W. Bowman. The lectures on Dental Physiology and Surgery by Mr. Tomes, are in this volume brought to a completion.

In Clinical Medicine, we may point to the lectures of Dr. Rees and Dr. Laycock, as presenting to our readers subjects of great practical interest.

A large portion of the volume is occupied by *Original Communications* on the various discoveries and improvements in medical science and practice.

Among them the contributions of Dr. Copland on the subject of Morbid Sympathies, have no doubt been fully appreciated by our readers. The elaborate papers of Dr. Wardell on the Scotch Epidemic fever, have been brought to a conclusion.

In the *Review* department of the journal, upwards of sixty works have been noticed. These have been selected for criticism, in a way to present to our readers a view of the progress of British medical literature, during the last six months.

In reference to the *Proceedings of Societies*, we may observe, that while the reports of the London Medical Societies are regularly inserted, there are some which appear in an authentic form only in the LONDON MEDICAL GAZETTE. These have an especial interest in relation to the progress of Pathology. We particularly allude to the reports of the Pathological Society of London, the Pathological Society of Manchester, and of the South London Medical Society. These reports are furnished to us by the secretaries of the respective societies. They will continue to appear as usual.

Of the *Medical Intelligence*, we shall only remark, that all facts and occurrences, which appeared to have the least value to medical readers, have been early recorded in the pages of this journal.

Notwithstanding the numerous changes which have taken place in medical periodicals during the last two years, it is a satisfaction to us to announce, that the LONDON MEDICAL GAZETTE continues to receive a large amount of support from the profession. The *Dublin Hospital Gazette*, an exclusively professional journal, conducted with great ability, has been discontinued. The decline in its circulation was attributed to the absence of politics, and to the

* See vol. xxxviii, p. 194.

exclusion of personal attacks and scurrilous articles from its pages! We do not think, however, so ill of the medical profession of this country, as to suppose that this was the real cause. The suppression of this journal was followed by the withdrawal of Dr. Seller's *Northern Journal of Medicine*, a monthly medical periodical published at Edinburgh, and now represented by the *Monthly Journal of Medical Science*. Within the last quarter, also, the *British and Foreign Medical Review* has been amalgamated with the *Medico-Chirurgical Review*.

In a well-written postscript to the last number of the *British and Foreign Medical Quarterly Review*, Dr. Forbes has entered into an analysis of the decline of medical periodical literature in Great Britain. He considers that the cheap weekly, have tended to extinguish the more expensive quarterly journals. This may be true to a certain extent; but we believe, if the whole truth were told, some of the former would be found to be mainly dependent on their advertising columns. Secret applications for advertisements have been forwarded to us, which prove that these are in some instances sought with greater eagerness than original medical articles. They who have watched the progress of events will have observed, in reference to each of the three London medical journals, that the price has been raised within a comparatively recent period. Various reasons have been ingeniously assigned for the change, but the plain and simple truth we believe to be, that either the advertisements or the subscriptions have fallen below the remunerating point; and no one—not even the editor of a *medical* periodical with a (hypothetical) list of tens of thousands of *readers*—can continue his literary exertions unless supported by *subscribers*.

After shewing, by a statistical table, the expenditure and receipts of the British and Foreign Review for twelve years, Dr. Forbes very justly observes.—“It is clear, from the financial exposition now made, that one of two things must happen in future: either the profession in this country must be contented with an article produced at less cost—*probably, therefore, an inferior article*—or they must determine to become more extensively *purchasers* as well as *readers* of journals, if they will have them *good*, that is, produced at a certain expenditure.” We do not wish to underrate the importance of cheapness in this utilitarian age; but journals, like other articles, may be *too* cheap.

We are inclined to agree with Dr. Forbes in thinking that the main cause of the decline in the circulation of the medical periodicals is to be ascribed, on the one hand, to the establishment of medical book-clubs and reading societies; and, on the other, to the reprint of the most important articles contained in them in the shape of Half-yearly Retrospects and Abstracts. The editors of the Abstracts and Retrospects have endeavoured to shew that their publications cannot interfere with the medical journals, and have flattered themselves that they were only making the contents of these journals more widely known. The result is, however, in our opinion, correctly represented by Dr. Forbes. They have most seriously encroached on the circulation of the journals. The purchasers of these half-yearly summaries are led to believe that they contain, either in the shape of lengthened reports or of copious extracts, all original contributions to medical literature which are of any practical utility. This kind of parasitical literature may flourish for a time, but in the end it will lead to the exhaustion of its pre-

sent means of support. The last year has cut off not a few sources of supply; and the time may come when enterprising gentlemen will find it a profitable speculation to apply the literary tomahawk in the American fashion, and supply the profession with concise and cheap abridgments of these Half-yearly Retrospects and Abstracts.

Our space will not permit us to dilate further upon this subject; but we cannot close these remarks without offering our hearty thanks to those contributors who have given us their support in the compilation of this volume; and to assure our readers that we shall spare no efforts in order to maintain for the LONDON MEDICAL GAZETTE that high character which it has acquired as a work of reference and authority among British medical journals.

Reviews.

A Manual of Elementary Chemistry. Theoretical and Practical. By GEORGE FOWNES, F.R.S., Professor of Practical Chemistry in University College, London. With numerous Wood Engravings. Second Ed.; pp. 596. London: Churchill, 1848.

To some who wield the critical pen, the appearance of a second edition of a "Manual" will not be welcome. The name, in the opinion of such judges, condemns the book. We do not class ourselves with these critics, and we regard the appearance of a second edition of Mr. Fownes' useful little work as a decided proof that the grumblers about the "age of manuals" are in a minority. The sale of a large impression of this manual, within a comparatively short period, shows that it has merits which the profession are fully able to appreciate. Our examination of the volume satisfies us that although the mode in which chemistry is treated is necessarily limited, it is a very useful guide for the beginner. Mr. Fownes

states in his preface that he offers it as an introduction to the larger and more comprehensive systematic works in our own language; and as such we do not hesitate to recommend it to our readers. We shall only remark, that this edition is copiously illustrated by wood-engravings, and that the author appears to have kept his text to the present level of the science.

Proceedings of Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Monday, Dec. 20, 1847.

Dr. WILLIAMS in the Chair.

Mr. ASTON KEY exhibited

The Elbow and Fore-arm of a man who received a severe gun-shot wound more than two years ago.

The patient, a middle-aged man, was admitted into Guy's Hospital under his care the 17th October, ult. He had been lately a private in the 50th Regt. of Foot, and had been struck, while in India, on the 21st March, 1845, by a stray grape shot, which went through the fore-arm, entering anteriorly, and carrying away a large portion of the ulna, and also apparently implicating the elbow-joint; he was ill eleven months in bed, during which time upwards of thirty pieces of bone came away, and the wounds had not healed until two years afterwards.

A cicatrix on the fore part of the elbow-joint, about an inch in length, and a longer and deeper one just below the olecranon; perfect ankylosis of the elbow joint and superior radio-ulnar articulation were observed on his admission. A very imperfect motion of the fingers, which, together with the hand, the fore-arm, and the arm, were much wasted, also existed. The hand and fingers had a peculiar purplish-red appearance; the thumb inclined to the palm, and was almost immoveable; there was severe constant pain of the thumb, the index, and second finger, together with numbness on the palmar surfaces, the pain and numbness increasing when the patient was in the open air, and subsiding entirely when he was near a fire; the little and ring finger were devoid of pain, but only partially moveable, and retained perfect sensibility, which was all but absent in the index, middle-finger, and thumb; great pain and numbness existed at the back of the elbow-joint, and also

from the fingers to the shoulder. The radial pulse was full and strong.

Amputation was performed above the elbow-joint, about a month after his admission.

In the dissection of the removed limb, which was made by Mr. Coleman, the humerus, ulna, and radius, were found ankylosed; the internal condyle projected anteriorly, the external posteriorly.

The flexor muscles had lost their condyloid attachments, and were connected by fascia principally to the ulna below; they were much smaller than natural; the flexor longus pollicis had become shortened from the injury, and would not allow of the proper extension of the thumb.

The median nerve, at a point corresponding to the bend of the elbow, presented a bulbous enlargement, about the size of a pea or small bean, and immediately below, it was intimately adherent by processes of thickened fascia to the textures surrounding it, so that for the space of half an inch the nerve apparently consisted of fascia, and could not be distinctly isolated by dissection; below this its appearance was natural.

The ulnar nerve was similarly adherent to the cellular tissue surrounding it for the space of an inch, immediately after it emerged from between the two heads of the flexor carpi ulnaris. The extensor muscles had lost part of their attachment to the external condyle.

MR. HENRY SMITH exhibited a specimen of

Extensive disease of the Pharynx and Larynx, taken from the body of a woman,

E. R., æt. 40, who about six months previous to her death had complained of sore throat, which she attributed to having caught cold. She came under the care of Mr. French first about two months ago, complaining of great pain in the front of the throat. There was considerable swelling on each side of the larynx and trachea, and exquisite tenderness when those parts were pressed upon by the finger, and occasionally aphonia of short duration. She suffered from a slight cough at the commencement, which ultimately became severe; there was always great difficulty of swallowing. Various remedies were tried without avail, including counter-irritation by caustic issue, and a seton at the nape of the neck.

Her symptoms gradually increased in severity; she lost flesh; could take little nourishment; her cough became very severe, attended with a profuse muco-purulent secretion, moist râles being audible all over the chest. She died in the third week of November, purely from exhaustion.

On the post-mortem examination, there was found thickening and induration of deep-seated tissues on each side of the larynx,

particularly the right. The pharynx was a mass of disease, nearly the whole of its mucous coat having been destroyed by gangrenous ulceration. The disease was more marked and extensive on the right side; here the thyroid cartilage was involved, its greater cornu being laid bare to the extent of half an inch. The tissues covering the arytenoidæ muscles and the ligaments, & the epiglottis were much thickened and infiltrated. On the left side the ulceration was not quite so extensive; the thyroid cartilage not having been affected in this situation. There was found thickening and induration of the pharynx, and the muscular and cellular tissue was in a state of incipient gangrene; the rest of the tube and the stomach were perfectly healthy. No disease could be found inside the larynx or trachea; the right lobe of the thyroid gland was enlarged.

Dr. HANDFIELD JONES exhibited a specimen of

Remarkable alterations in the Liver and Right Kidney,

from the body of a girl, æt. 18, who had died after a sudden attack of jaundice.

The patient, weak and cachectic, was admitted into St. George's Hospital Nov. 17th, under the care of Dr. Nairne. She complained of amenorrhœa, slight cough, and palpitation; when 8 years old she had a rheumatic attack, with pain in the chest, since which time she has been subject to palpitation and dyspnoea. On admission, her tongue was clean and moist, and bowels open; at the apex of the right lung some degree of dullness was noticed on percussion, and here, also, the breathing was coarse, the expiratory sound prolonged, and there was increased vocal resonance; the heart's action was increased; there was extended dullness in the cardiac region, the sounds were audible over the whole chest, and there was a loud murmur accompanying the first at the apex. During four days she remained in much the same state; on the 21st vomiting occurred, and continued incessantly in spite of various remedies. At this time the urine was examined, (not microscopically) and found apparently healthy; the cough increased; the sputa became muco-purulent, and afterwards somewhat rusty; the action of the heart very turbulent. On the 29th, the action of the heart continuing very turbulent, there was a manifest bulging noticed of the wall of the chest, about on a level with the base of the heart; it seemed as if that organ was pushed forwards. Jaundice now made its appearance, the stools also being white; diarrhœa succeeded, and the vomiting continued till Dec. 4th, when it subsided, and she expressed herself as feeling better; but the jaundice did not diminish, the features became collapsed, and

she sank on the 6th December; a day or two before death a slight attack of erysipelas having occurred on the face.

Post-mortem examination.—The mucous membrane of fauces, and of the upper part of the pharynx and larynx, was red, covered with tenacious mucus, and with a thin layer of lymph in some parts. The lungs were very much congested throughout, in some parts there almost appeared to be extravasation of blood, forming numerous dark but small patches; the lower lobe of the left lung being incompletely hepatised. A portion of one of the lungs where it was least congested was examined by the microscope, which shewed a very great increase in the epithelium lining the air-cells, multitudes of pale granular cells being found in this situation, together with a few exudation corpuscles, instead of the mere nuclei or feebly developed cells which should normally exist. A moderate quantity of serum, with some flakes of lymph floating in it, existed in the pericardium. The heart was large, its cavities distended with coagula, the left ventricle much dilated, its walls slightly thickened, its cavity occupied by a large firm fibrinous coagulum; small fibrinous fringes on the aortic valves, the mitral valve thickened, and the orifice of the aortic valves somewhat narrowed.

The *liver* was of a deep yellow colour; on making a section, the interlobular veins were seen highly congested, the lobules themselves not at all; the gall-bladder was full of bile, the ducts quite pervious. On examining these sections under the microscope, it was immediately seen that the secreting structure was seriously affected. On the *margins* of the lobules the cells still existed, and their nuclei were distinctly visible, though they were gorged with bile of a deep yellow tint; in by far, however, the greatest extent of the lobules no cells could be discerned; a densely aggregated group of oil-globules formed a zone concentric to the marginal one, where the bile-laden cells still retained their forms; within this there was nothing but coarse granular and amorphous matter, with a few groups of oil-globules. The relative size of this interior part where the degeneration was most complete varied in different lobules, but in some it occupied nearly one half of the whole extent.

The *spleen* was unusually firm, many of its nuclei developing fibres from the opposite extremities.

The *kidneys* were very firm, not congested, but perhaps rather pale; microscopic examination showed the tubuli of the left kidney tolerably healthy, but the granular matter of the epithelium, perhaps, rather coarse. On cutting into the right kidney, there was seen a large patch of yellow colour, extending throughout the cortical substance, and which was accurately bounded

and separated from the surrounding healthy part by a broad line of deep red colour, which was happily compared by Dr. Nairne to the boundary line of gangrene which has ceased to spread. The discolouration of the tissue extended to the surface of the organ; the corresponding part of the capsule was similarly discoloured, and also evidently thickened. On viewing these sections of the altered portion, it was very apparent that the secreting tubuli were principally affected, in some specimens being completely destroyed, numerous coarsely granular cells, the remains of their epithelium, being alone visible. In the majority of instances, however, the tubes still remained, but were so bloated and opaque as to be evidently unfit for the discharge of their functions, resembling in many respects the diseased tubes which are found in a kidney which has suffered consecutively to scarlatina. On close examination, several of these tubes were still seen to be invested by a basement membrane, in the interior of which were dense masses of large coarse epithelial cells, which completely filled the cavity and obstructed the passage. The matrix was unaffected; in particular the capsules of the Malpighian tufts were beautifully seen; no trace of any fibrinous or other deposit could be found in the portions examined by Dr. Jones and Mr. Simon, though Dr. Bence Jones had found a considerable quantity of free oily matter in a specimen from this same kidney. The Malpighian tufts themselves separated with great readiness from their capsules; their capillaries had quite lost their natural aspect, and appeared of an indistinct fibrous or granular texture.

Dr. Jones remarked, that it was a question of much interest, what was the nature of the remarkable alterations found in the liver and kidneys in this case? He thought they could be regarded, very probably, as of the same nature, and referable to a similar cause. The alteration of the secreting structure in the liver did not seem to have been accompanied with any traces or signs of inflammation, but to have been essentially a rapid process of degeneration, probably of the same kind as that occurring in cases of suppression of bile, as described by Drs. Williams and Budd, the characteristic pathological change in these being the more or less complete destruction of the secreting cells. If, then, the alteration of the liver were not the effect of inflammation, was it not probable that the change in the kidney resulted from a similar cause,—viz., a very acute form of the degeneration, with which we are all so familiar in the ordinary granular kidney?

Dr. BRINTON exhibited

A series of tumors of a scrofulous (?) character from beneath the peritoneum, taken from the body of a man, æt. 52, (a

subject in the King's College Dissecting-room), who had died from bronchitis. No previous history could be obtained.

The stomach, duodenum, ileum, cæcum, and ascending colon, diaphragm, liver, and coronary ligament, and uterus, were occupied by irregular whitish-yellow tumors, varying in size from a millet-seed to a walnut, situated between the peritoneum and the several viscera; in the larger tumors the peritoneum was almost reduced to a pedicle. Their consistence was soft, waxy, almost friable, readily taking any shape by pressure; their texture nearly homogeneous, but apparently containing a very small quantity of areolar tissue, and their connections to neighbouring parts slight. They were found to consist, on microscopic examination, of granules, amorphous matter, cells of pretty uniform appearance, in small quantity, and oily or fatty matter, blood discs, and some pus-cells, with very few fibres. The thoracic viscera were without tubercles, and Peyer's patches healthy.

Dr. CHEVERS exhibited a

Heart which displayed complete (congenital) obliteration of the Orifice of the Pulmonary Artery.

It had been sent to him by Mr. Alfred Benson.

The right auricle was of large size, as were also the venæ cavæ. The foramen ovale was sufficiently open to admit a goose-quill; it was guarded by a valve which would only allow of the passage of blood from right to left. The tricuspid valve was natural. The right ventricle was remarkably strong and capacious; the aorta, which was very large, but otherwise normal in all its tissues, arose from this ventricle. A small cul de sac formed between the muscoli pectinati of the anterior and upper part of the ventricle, led upwards to the spot at which the pulmonary artery usually opens, but terminated there in an impervious partition formed by endocardium and a thin layer of muscular fibres; the orifice of the vessel had evidently become obliterated at this spot. Immediately above this the ascending pulmonary artery was found occupying nearly its usual position, but of very small diameter as compared with the aorta. At the upper part of its arch it gave off a vessel which would barely admit a small probe, and which appeared to have communicated with the under part of the aorta; but, unfortunately, the latter vessel had been divided too low down to admit of the mode of communication between the systemic and pulmonary arteries being clearly ascertained. This little vessel was, however, in all probability, the ductus arteriosus. Beyond this the pulmonary artery divided into two branches of an equal size, which doubtless passed to the

lungs. This portion of the vessel was coated with adherent coagulum. The left auricle was much smaller than the right; the pulmonary veins, which were also small, entered it in the usual manner. The mitral valve was normal. The left ventricle was smaller and less muscular than the right; a considerable opening in the upper part of the ventricular septum formed a direct communication between the left ventricle and the aortic orifice. Dr. Chevers considered that the very small vessel, supposed to be the arterial duct, could not have furnished sufficient blood to the lungs to effect the purposes of respiration: he thought it probable that some other communication had existed between the pulmonary and systemic arteries, either by a branch distributed from the left subclavian artery, or by means of greatly dilated bronchial arteries. The case occurred in the practice of Mr. Kellock. No particulars of its history had been furnished; but the heart appeared to be that of a child who had lived for several weeks at least.

Mr. NATHANIEL WARD exhibited a specimen of

Aneurism of the Arch of the Aorta, involving the Arteria Innominata.

A shoemaker, æt. 48, was admitted into the London Hospital, under Mr. Hamilton, Nov. 30, with a pulsating tumor on the right side of the neck, extending from behind the clavicle, which was protruded by it, three inches up the neck. It was about the size of an egg, rather uneven on the surface, broader below than above. It had been noticed, nine months prior to his admission, by his medical attendant, his own attention never having been drawn to it previously. He appeared care-worn and anxious.

On the third day after admission, the tumor became very painful, and suddenly increased on the fourth to twice its previous size, the surrounding parts of the neck becoming oedematous. The increase in the volume of the tumor from this period became gradual, ultimately extending to within an inch of the ramus of the jaw, and somewhat to the left of the median line. He died on the eighth day after admission. The prominent symptoms were, gradually increasing dyspnoea and pain in the head, great restlessness, an irregular, occasionally intermittent, pulse, the left radial artery always beating much more powerfully than the right. The chief treatment adopted consisted in the occasional abstraction of small quantities of blood from the arm, and the exhibition of sedatives.

On the post-mortem examination, an aneurism of the size of an orange was found, formed by the commencement of the transverse portion of the arch of the aorta. The

sac was uneven on the surface, hard, and unyielding, from the deposit of earthy matter in its coats. It had contracted adhesions with the upper part of the sternum and first rib. The inferior three-fourths of the arteria innominata concurred to form the sac, which presented a large orifice common to it and the arch, that part of the opening corresponding to the innominata being bounded above by a round smooth ridge from the folding out of the sac on the unaffected part of the artery, which, however, had contracted such adhesion with it that the right carotid and subclavian appeared to arise from the upper third of its posterior surface. The true aneurism was surmounted by a large false aneurism twice its volume, the communication between the two being by an irregular jagged opening, admitting the easy introduction of a couple of fingers, and into which protruded the head of the clavicle in a carious condition, being detached from its posterior and interclavicular ligaments. The outer half of the bone was projected forwards and upwards more than an inch, and imbedded in a groove, to the extent of two-thirds of its circumference, the soft parts being distended above and below from the pressure of the sac of the aneurism from behind.

Mr. WARD remarked, that the chief point of practical interest in connexion with the case was the situation of the aneurism, which, being in the neck, had led those who examined the patient to the inference that the common carotid was implicated in the disease, but which vessel, as above detailed, was found to have been pushed backwards.

Fracture of the Neck of the Thigh Bone, from a lady, æt. 71, who had died about three months ago from disease of the heart, having fractured the right thigh-bone twenty months previously. The neck of the bone had undergone complete absorption, the union between the body and the head being brought about by two strong ligaments (one superior and the other inferior), each almost equalling in volume the triangular ligament of the joint. The patient, almost immediately after the accident, to a short time before death, would never keep quiet, but was constantly hobbling about with the aid of a stick.

Mr. CAIAP exhibited the *Larynx, Trachea, and Lungs of a Child Two Years old, who had died from Croup,*

the attack of which had lasted nearly two days. The symptoms were of a very acute character, and the child died ten hours after the operation of tracheotomy, which had afforded much temporary relief.

The entire mucous membrane from the upper part of the larynx to the primary

ramifications of the bronchi were lined with a quantity of soft fibrin. The structure of the lungs was here and there hepatized.

Dr. WILLIAMS exhibited a specimen of *Ulcer situate near the Cardiac end of the Stomach,*

taken from the body of a female who had died with symptoms of perforation of about fourteen hours' duration. Prior to the fatal attack, she had been in the habit of complaining of pain about the left hypochondrium and lumbar regions, and had been more ailing than usual about a week before her death; on the evening prior to which, however, she had walked to church. The uterine functions had been deranged.

The ulcer was circular, would admit of the introduction of the thumb; the edges smooth and scarcely thickened, and no appearance of disease around the opening; some parts of the mucous membrane of the stomach were red, but not softened.

• Mr. N. WARD exhibited a specimen of *Ulcer situate in the middle of the smaller Curvature of the Stomach.*

A lady, æt. 27, who had been married seven months, came under the care of Mr. Ward, of Epsom, with symptoms of perforation, and died from peritonitis on the eighth day after their accession. She had had for some time dyspeptic symptoms, and was otherwise "ailing" at the period of her marriage. The ulcer was large, with smooth thin circumference of the size of a crown-piece, situated in the middle of the small curvature, involving part of the anterior and posterior walls below it.

Mr. BROOKE exhibited a specimen of *Malignant Disease of the Clitoris.*

The subject of this disease was 45 years of age, and had been married nearly 20 years, but had never been pregnant. Menstruation had always occurred with regularity.

For several years preceding any external appearance of the disease, sexual intercourse was followed by pain in the region of the clitoris, which at last became so severe as to compel its discontinuance.

About two years since, an excrescence, attached by a pedicle, and about the size of a nut, was removed by ligature from the region of the clitoris; shortly after which, ulceration commenced at or near the point from which the morbid growth had been removed, and had gradually progressed ever since, and, previous to the operation, had involved one of the nymphæ (the other having been apparently eroded) and a considerable portion of both labia, and extended downwards to within three-quarters of an inch of the urethra.

The patient was placed under the influence

of mercury, and subsequently took sarsaparilla with iodide of potassium for several weeks, but without in any degree arresting the progress of the disease. The patient had latterly suffered from almost incessant pain, which rendered necessary the repeated exhibition of opiates. The pain was much aggravated by the application of escharotics.

The general health being apparently otherwise good, the removal of the morbid parts by the knife was considered advisable, although one of the inguinal glands was a little enlarged. This was accordingly done about three weeks since, the actual cautery being freely applied to the course of the clitoris, and to every point of the surface that wore a suspicious aspect. Profuse hæmorrhage followed from several small vessels, which there was much difficulty in arresting. From this cause the time of the operation was much protracted, but the patient was kept under the influence of chloroform for nearly an hour; and, when its exhibition was discontinued, she soon recovered, without any unpleasant symptom. Mr. Brooke observed, that the wound was now perfectly healthy, and nearly healed, and the patient was free from pain, much gratified at the result of the operation.

The meeting adjourned to Monday, Jan. 3d, 8 P.M.

Medical Trials and Inquests.

ACTION RESPECTING THE SALE OF MEDICAL PRACTICES. CAUTION TO MEDICAL PRACTITIONERS.

THE following trial, which is of some interest to that numerous class of professional men who are always engaged in buying and selling medical practices, was tried last week in the Court of Common Pleas.

Pyke v. Harvey.

Mr. Sergeant Byles appeared for the plaintiff; and Mr. Humfrey, Q.C., for the defendant.

The action was brought to recover the sum of £65. 2s. 8d., for commission due upon the sale of a surgeon's practice.

It appeared from the evidence that the plaintiff is a law and medical agent, carrying on business in Chancery Lane, and that the defendant was formerly a surgeon residing in Great Queen Street, Lincoln's Inn Fields, but had recently become surgeon to an institution in Soho Square for the cure of diseases of the ear. On the 14th of December, 1846, the defendant had instructed the plaintiff to offer his practice in Queen Street for sale, and the plaintiff had accordingly inserted an advertisement in the *Lancet*, and another in the *Medical Times*, containing a description of the business. On the 23d of December

the plaintiff had received an application from a gentleman of the name of Stevens, who subsequently became the purchaser, requesting to be furnished with the particulars, which the plaintiff's son said were forwarded to him by himself on the same day; but the contract was afterwards concluded by the defendant without the intervention of the plaintiff.

Mr. HUMFREY called Mr. Stevens, who said, he had written to Mr. Pyke, but that the letter which he had received was not dated, as had been stated by him, on the 23d of December, but on the 24th, and was received by him (Mr. Stevens) on the 25th. He also proved that on the same morning he received a letter from Mr. Orridge, an agent, who had also been employed by the defendant, containing particulars of a business to be disposed of; and that without replying to the plaintiff's letter he came to town, and was introduced by Mr. Orridge to the defendant, and purchased his business; and that he did not discover till afterwards, that it was the same business about which Mr. Pyke, the plaintiff, had written to him.

It was also proved that the defendant had tendered £5 to the plaintiff for the trouble of receiving the instructions, and to cover the expense of inserting three advertisements in the papers.

The learned CHIEF JUSTICE summed up the evidence, and the jury gave a verdict for the defendant.

Correspondence.

CORONERS AND THEIR VICTIMS.—LETTER FROM MR. W. H. BENSON.

SIR,—As you have recently been directing the attention of the profession to some of the evils arising from the present system of coroners' inquests, I beg permission to mention an incident, which has recently occurred to myself, and to ask your advice under the circumstances. As house-surgeon to this Infirmary, I was called upon at the last assizes to give evidence respecting the death of a seaman, who died in this house from an accident caused by the negligence of a captain of a steam boat, and for which, at a coroner's inquest, a verdict of manslaughter was returned against the latter. After the inquest, the coroner told the friends of the deceased, that his (the coroner's son) who had just passed as an attorney, and who is in partnership with his father, besides holding under him the office of deputy-coroner, would conduct the case for them at the assizes, to which they consented. From this gentleman I have been unable to obtain the usual fee allowed to medical witnesses. He has employed every excuse to escape its payment, and has finally refused to entertain

the application on the ground of my holding the situation of house-surgeon. I shall therefore feel obliged by your stating, whether that objection does apply to house-surgeons giving evidence at assizes, as I know that my predecessors have always received £2. 2s. a day for their attendance at assizes; also whether the coroner's son is a proper person to conduct the prosecution; and also whether a house-surgeon is entitled to the same fees as other medical witnesses, for post-mortem examinations performed without the walls of the Infirmary.

I remain, sir,

Yours respectfully,

W. H. BARNES.

Newcastle-upon-Tyne, Dec. 1847.

. Our correspondent should provide himself with the Medical Witnesses' Act, 6th and 7th William 4th, chapter 89. Under the 5th section of the statute, no fee is payable at an inquest, to the medical officer of any public medical institution, for evidence respecting the death of a person whom it was his duty to attend. The policy of such a restriction is by no means apparent; for medical officers of public medical institutions either work gratuitously for the Charity, or are considerably underpaid! Why the coroner should step in and claim an extension of charity after the death of a patient, by insisting upon having additional medical services without paying for them, is not very obvious. Nevertheless, such is the law; although we happen to know that all coroners do not strictly adhere to the letter of the statute. They sometimes liberally pay a medical witness when a post-mortem examination has been required. The coroner has nothing whatever to do with medical expenses for attendance at assizes. The application should in this case always be made to the associate of the judge, and it should then be represented that no fee had been received for attendance and evidence at the inquest. The judges may thus be induced to remedy the defect in the law, and order an increased allowance.

A house-surgeon (if a licensed practitioner) is entitled to the same fees at inquests as other medical witnesses for post-mortem examinations performed without the walls of the Infirmary, provided the building where the deceased lay, did not belong to the Infirmary, and provided it was no part of the duty of the said house-surgeon to attend the deceased person as a medical officer of the institution. A plaint by "tort" in the County Court would lead to a recovery of the fee.

The propriety of a coroner or his deputy prosecuting a case at the assizes is a legal question. To say the least the practice is highly indecent; and a few years since at the

Winchester assizes, a coroner was severely reprimanded by a judge, for prosecuting in a case in which he had held an inquest.

Medical Intelligence.

PROGRESS OF CHOLERA.

ACCORDING to the most recent accounts from St. Petersburg, the cholera continued to decrease at Moscow. Between the 22d Nov; and the 6th Dec., 506 cases occurred, 229 of which had terminated fatally. The average number of cases was consequently 36 per day, and of deaths 16. The epidemic had likewise manifested itself, but without much violence, in the governments of Minsk and of Podolia. At Mohileff, in White Russia, the number of patients was, at the latter end of November, 236, and of deaths 35. The malady was fast subsiding in all the other provinces.

The *Journal des Débats* publishes the following letter, dated Mossul, (a large town in Asiatic Turkey) the 31st of October:— "The cholera has appeared here at the moment when it was least expected. The persons attacked died almost suddenly. The Pasha immediately issued an order forbidding that any fruit should be sold to the troops, whom he has removed to a camp at some distance from the town. The appearance of this scourge is the more alarming as there are but two physicians in the city."

MEMORIAL TO SIR GEORGE GREY.

To the Right Hon. Sir George Grey, Bart.
Her Majesty's Principal Secretary of State for the Home Department.

The Memorial of the President, Vice-Presidents and Council of the National Institute of Medicine, Surgery, and Midwifery,

Sheweth:—That your memorialists were duly elected the representative Council of the National Institute in August 1847, and that they represent the opinions of above four thousand of the general practitioners of England and Wales.

That upon a former occasion the previous Council of the National Institute had the honour of presenting a memorial bearing date December 24th, 1846, to Her Majesty's Secretary of State for the Home Department, in which memorial the opinions and sentiments of the class of medical practitioners whom your memorialists represent were carefully and deliberately stated. That the statements contained in that memorial were subsequently explained and confirmed by a deputation from the said Council of the Institute in an interview with the Right Honourable Sir George Grey, Bart., at the Home Office, on Friday, February the 5th, 1847; and your memorialists fully believe

that at that interview the deputation were enabled so far to convince the Right Honourable the Secretary of State of their truth and importance, as to elicit the assurance that the Council should be admitted concurrent parties to any measure of medical reform that may be adopted by the Government.

That your memorialists fully concur in the propriety of the recommendation conveyed to them, and to others of their medical brethren, from the same influential quarter, to the effect, that it would be desirable that the members of the medical profession should themselves meet and agree upon some general plan prior to the Government undertaking to introduce a bill before Parliament for the revision of the laws affecting the medical profession. That your memorialists have ever been most anxious to promote the views contained in that recommendation, and have been willing and prepared to meet any authorised parties representing the existing medical institutions, and to discuss any plan that might be submitted, in the most amicable spirit, and with the most sincere desire to obtain such a settlement of this highly important question as may conduce to the public welfare and the peace and tranquillity of the profession.

That your memorialists deeply regret that the advice alluded to has not been acted upon, and that the benevolent intentions of the Government have not been reciprocated in those quarters from whence an immediate proposition for a conference should have emanated.

That your memorialists are fully persuaded that daily increasing evils press upon the people of these realms, in consequence of the laws by which the medical institutions of the country are governed having been found by experience to be quite inadequate to the wants of the public, and from their charters having become in a great degree obsolete. That before any efficient measure affecting the public health, or sanitary improvement, can be successfully carried into effect, medical reform appears to be an essential preliminary step; and your memorialists can never too strongly impress upon the Government and the Legislature, that the medical question is quite as important to the community as it is to the medical profession itself.

That, in the opinion of your memorialists, the only way to arrive at a satisfactory settlement of the affairs of the medical profession, will be in the first instance to incorporate by royal charter the general practitioners in a College of Medicine, Surgery and Midwifery.

That your memorialists respectfully beg it to be borne in mind, that the general

practitioners constitute at least nine-tenths of the medical profession; that the duties which devolve upon them are of vital importance, and that no act of the Legislature or of the corporations can prevent by far the largest portion of the public from being entrusted to their exclusive professional care. That the attainments of the present race of general practitioners are of the highest order, and are highly honourable to the profession, but that their position is most grievous and anomalous from being excluded from the benefits and respectability of a legal incorporation.

That your memorialists entertain a confident hope that they have succeeded in convincing the Right Honourable the Secretary of State of the just claims of the highly meritorious body they represent to a legally recognised position; and your memorialists fully trust that those arguments which were found successful with a former Government, and which were so far acted upon as to have induced a former Secretary of State to state in his place in Parliament his intention to incorporate by royal charter the general practitioners, may have lost none of their force, or be less conclusive than formerly of the justice of their claims, and of the paramount necessity of this preliminary measure being forthwith adopted.

That, in conclusion, your memorialists beg respectfully, yet most emphatically, to reiterate their grave and deliberate opinion that it would tend materially to the advancement of science, to the welfare of the community, and to the best interests of the medical profession, if the prayer of this memorial were graciously acceded to, by which the general practitioners would be duly recognised, and by a properly-defined title be placed amongst the medical institutions (?) of this enlightened country.

(Signed)

R. R. PENNINGTON, President.

National Institute of Medicine, Surgery
and Midwifery, 4, Hanover Square,
December 8th, 1847.

BENEVOLENT FUND OF THE PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION.

THE benevolent fund of the Provincial Medical and Surgical Association, was established in July, 1836, since which time, it has extended its aid to *one hundred and eleven* cases of urgent distress at a cost of £1187.—Many of these cases have been very inadequately relieved; and many other important forms of misery have been necessarily passed over, because of the insufficiency of the income.

The object of this fund is two-fold: first, to assist the pecuniary difficulties of medical men themselves, who through sickness or misfortune, have been temporarily deprived of the means of maintaining their credit,

supporting their families, and keeping their position in society: but it does not extend its aid to the improvident, the unworthy—or to those who are not recognized as legal practitioners.

A second branch of this object, is the relief of the widow, or the orphan children of such legal practitioner, who may be placed in urgently distressed circumstances, by the sickness and death of him upon whom probably all their means of support depended.

The benevolent fund is not confined in its operation to the members of the Provincial Association,—and subscription to that association gives no title to its assistance. The only circumstances which establish a claim to relief, are, the legality of the practitioner,—the unsullied report of his conduct and character,—and the urgency of his distress.

The object then is *purely* benevolent; and in this respect, it differs from all other medical relief funds to be found in England. There are many excellent amicable professional institutions, which provide for the distress of their members;—and for the misfortunes and destitution of the widows or orphans of such members.

But the benevolent fund of the Provincial Medical and Surgical Association, occupies a ground peculiarly its own. It extends its relief to those who through poverty or misfortune, have not connected themselves by subscription with any one of those societies; and stretches out the hand of active sympathy to those who have no other means of obtaining relief for their sorrows. Its claims to support therefore are unique,—and extend to the entire kingdom; for poverty and distress exist every where;—and the class of sufferers to whom it gives its aid, can have no hope of assistance beyond this only source.

The medical profession at large are peculiarly called upon to support this fund:—first, they who from the sunshine of prosperity are placed above the apprehension of want, should in gratitude to God, give of their abundance; and they who have been able to subscribe to amicable associations for securing from want themselves or their families, should be invited to drop also the mite of charity for those who have not been able thus to secure themselves,—for those who are ready to perish.

The public at large, where this object has been adequately represented to them, have been found willing to administer their quota of aid to the distressed of a class of men, from whom they are daily receiving a large accession of comfort, and the restoration of the invaluable blessing of health.

The Fund thus created, consists of donations and subscriptions;—the former to accumulate, till a certain sum has been obtained, when the interest is to be applied to granting annuities where needful: but the

annual subscriptions constitute the ready available source from which present distresses can be relieved.

The donations thus accumulated, have not yet reached a sum from which it would be prudent to commence these urgently needed annuities: but they have been invested in the names of trustees, till this desideratum has been accomplished.

The subscriptions, probably from the pressure of the times, have not reached their usual amount during the last year; while the claims on the fund have been augmented from this very cause, and have been so numerous and urgent “that the fund has been more than once exhausted, so as to occasion delay in affording relief to many deserving cases”—and some months have elapsed before the grants could be renewed.

The object therefore of the present simple but earnest appeal to the profession and the public, is to ask for donations and subscriptions in order that each of these branches may be placed upon a more efficient footing;—and that relief may be adequately given to cases of intense suffering which shrink from observation, and are carefully hidden from the ordinary eye of benevolence:—to cases, than which none are more entitled to sympathy;—to cases, which have no other source of relief,—and are abundantly deserving of that effort which is now so earnestly pleaded.—And shall this appeal be made in vain?—Blessed be the “man that provideth for the sick and needy; the Lord shall deliver him in the time of trouble.”

W. NEWNHAM,

Treasurer and Secretary.

Farnham, August, 1847.

UNIVERSITY COLLEGE HOSPITAL.

AT a recent meeting of the council of this institution, it was unanimously resolved to invite Professor Syme, of the University of Edinburgh, to succeed the late lamented Mr. Liston—an invitation which it is said the professor has accepted. The students of the University are about to call a meeting for the purpose of raising the necessary funds to erect a statue to the memory of their late teacher. Mr. Campbell, the sculptor, an intimate friend of Mr. Liston, has taken a very excellent cast of the head, bust, and hand of the lamented deceased.

THE INFLUENZA.

THIS epidemic, after having traversed northern Europe, has now extended its ravages to Algiers and the northern coast of Africa, as also to Athens and other parts of Greece.

INJURIOUS EFFECTS OF CHLOROFORM.

AT a recent meeting of the Surgical Society of Ireland, Mr. Stapleton stated that he had lately tried chloroform in some cases in Jervis Street Hospital. One man was put into a sound sleep, but awoke in about a

minute afterwards, and expressed himself as having been conscious of everything that was done to him; while apparently unconscious, he said that he had felt himself 'pinched,' and so forth; but was unable to resist or give any indication of feeling. A resident pupil of the hospital had tried it a day or two ago, and was very merry during its action; to-day he again tried it, and was put to sleep in two minutes, but recovered in two minutes more, and shortly after began laughing in a hysterical manner, and soon fell into violent convulsions, so as to require the united efforts of several people to hold him down in bed; he then got rigors, cold perspirations, and sickness of the stomach; his pulse sometimes fell very low, and, when the excitement was coming on, it would rise to 100. He remained in this uncertain state for two hours, and then expressed a wish to sleep. Under the operation of the chloroform there was a complete loss of muscular power, except during the convulsions. — *Dublin Medical Press.*

THE DISCOVERY OF CHLOROFORM.

[A PAMPHLET has been forwarded to us by Mr. D. Waldie, of Liverpool, on the subject of chloroform. With the exception of the following extract, it contains nothing which has not already appeared in the pages of this journal :—]

"The vapour of the so-called chloric ether seems to have been tried as a substitute for sulphuric ether in February or March last, but without very satisfactory results, which, indeed, could scarcely be expected, unless the vapour of alcohol possessed the same properties, it being composed principally of alcohol.* When in Scotland, in October last, Dr. Simpson introduced the subject to me, inquiring if I knew of anything likely to answer. Chloric ether was mentioned during the conversation, and, being well acquainted with its composition, and with the volatility, agreeable flavour, and medicinal properties of Chloroform, I recommended him to try it, promising to prepare some after my return to Liverpool, and send it to him. Other engagements and various impediments prevented me from doing this so soon as I should have wished; and in the meantime Dr. Simpson, having procured some in Edinburgh, obtained the results which he communicated to the Medico-Chirurgical Society of Edinburgh on the 10th of November, and which he published in a pamphlet entitled—'Notice of a New Anæsthetic Agent as a Substitute for Sulphuric Ether in Surgery and Midwifery.' "

* This is not quite correct. We have made inquiry of an eminent metropolitan surgeon who employed it in the early part of 1846, and find that the narcotic effects were perfectly produced. The great expense of it compared with ether was the principal cause of its being discontinued.—*Ed. Gaz.*

CHARGES FOR PROFESSIONAL VISITS NOT RECOVERABLE IN THE COUNTY COURTS.

The following letter has been recently addressed to the editor of the *Times* :—

Sir,—Will you favour me by inserting in your influential paper a decision of the judge (Mr. Chilton, Q.C.) at the County Court, viz. :—

That a medical man cannot in a general bill for medicines insert a charge for a professional visit.

In the bill was a charge of 3s. 6d. for a visit (the only one charged in the bill, and on that day no medicine was sent). He struck it out.

It follows, that, however frequent a medical man visits during the intervals of his prescriptions, he can claim no remuneration for his trouble. Is this correct?

I am, sir, yours, &c.,

M.R.C.S.

* * * The writer describes himself as M.R.C.S.; but we presume that he also holds the license of the Apothecaries' Society, otherwise he has no legal right to charge for visits made in a medical capacity. The Superior Courts have recognised the right of licentiates to charge for medical attendance, as well as for the medicines supplied, in the cases of *Handley v. Henson*, 4 C. and P. 110, and *Simpson v. Rolfe*, 4 Tyr. 325.

SERIOUS ILLNESS OF BARON BERZELIUS.

By letters from Stockholm, dated the 7th inst., we learn that Baron Berzelius, who has been for some weeks indisposed, has been seized with paralysis affecting the lower half of his body. His medical attendants have lost all hope of his recovery. His intellectual faculties are perfectly retained; and he dictates to his secretary daily the details necessary for the completion of a work upon which he has been for some time engaged. The necessary experiments are performed at his bed-side. The King of Sweden daily sends to make inquiries respecting the state of his illustrious subject. Although the name of Berzelius has been familiar to the profession for a long period, yet this eminent chemist, who succeeded in acquiring early a European reputation, is only in his 68th year.

ROYAL COLLEGE OF SURGEONS.

Admitted members on the 17th inst.

Messrs. W. Crosby—J. Bennett—W. Fuller—W. S. Falls—F. Glenton—R. Colthurst—C. W. Price—A. Barton—and F. S. Hodges.

Admitted on the 20th inst.

Messrs. F. P. Francis—T. Crowther—S. B. Birch—G. E. Gains—F. J. Barton—J. Barrow—M. H. Ashwell—J. S. Gundry—T. P. Rust—C. F. A. Courtney—G. Welford—J. Graham—W. Parry—W. C. Orford—and J. F. Ollard.

APOTHECARIES' HALL.

NAMES of gentlemen who passed their Examination in the Science and Practice of Medicine, and received certificates to practise, on Thursday, December 23d, 1847:—
 Frederick George Harcourt, Ipswich—Peter Knight—Augustus Grant, Thayer Street—Gabert Fishlake Cundy, 1 Halkin Street—Benjamin Button, Hopton, Suffolk—Robert Stead Jones Stevens, Ely, Cambridge.

BIRTHS & DEATHS IN THE METROPOLIS
During the week ending Saturday, Dec. 25.

BIRTHS.		DEATHS.	Av. of 5 Ant.
Males....	584	Males....	528
Females..	613	Females..	518
	1197		1046

DEATHS IN DIFFERENT DISTRICTS.

WEST—Kensington; Chelsea; St. George, Hanover Square; Westminster; St. Martin in the Fields; St. James .. (Pop. 301,326)	188
NORTH—St. Marylebone; St. Pancras; Islington; Hackney .. (Pop. 366,308)	260
CENTRAL—St. Giles and St. George; Strand; Holborn; Clerkenwell; St. Luke; East London; West London; the City of London .. (Pop. 374,769)	195
EAST—Shoreditch; Bethnal Green; Whitechapel; St. George in the East; Stepney; Poplar .. (Pop. 393,247)	240
SOUTH—St. Saviour; St. Olave; Bermondsey; St. George, Southwark; Newington; Lambeth; Wandsworth and Clapham; Camberwell; Rotherhithe; Greenwich .. (Pop. 479,469)	364
Total	1247

CAUSES OF DEATH.

	ALL CAUSES.	Av. of 5 Ant.
ALL CAUSES	1247	1046
SPECIFIED CAUSES	1247	1039
1. Zymotic (or Epidemic, Endemic, Contagious) Diseases ..	389	211
<i>Sporadic Diseases, viz.—</i>		
2. Dropsy, Cancer, &c. of uncertain seat	107	104
3. Brain, Spinal Marrow, Nerves, and Senses	126	157
4. Lungs and other Organs of Respiration	391	333
5. Heart and Bloodvessels	24	84
6. Stomach, Liver, and other Organs of Digestion	62	74
7. Diseases of the Kidneys, &c. ..	11	9
8. Childbirth, Diseases of the Uterus, &c.	14	14
9. Rheumatism, Diseases of the Bones, Joints, &c.	5	7
10. Skin, Cellular Tissue, &c.	5	2
11. Old Age	59	65
12. Violence, Privation, Cold, and Intemperance	35	29

The following is a selection of the numbers of Deaths from the most important special causes:

Small-pox	18	Paralysis	17
Measles	37	Convulsion	31
Scarlatina	41	Bronchitis	107
Hoopings-cough ..	28	Pneumonia	131
Diarrhoea	10	Phthisis	111
Cholera	1	Dis. of Lungs, &c. ..	9
Influenza	142	Teething	7
Typhus	68	Dis. Stomach, &c. ..	2
Dropsy	2	Dis. of Liver, &c. ..	11
Sudden deaths ..	16	Childbirth	12
Hydrocephalus ..	28	Dis. of Uterus, &c. ..	1
Apoplexy	14		

REMARKS.—The total number of deaths was

201 above the weekly autumnal average. Our readers will perceive that there has been a sudden and great improvement in the health of the metropolis, as indicated by the deaths. They are 699 less than in the preceding week.

METEOROLOGICAL SUMMARY.

Mean Height of Barometer	29.63
" Thermometer	36.4
Self-registering do. max. 0 min. 23"	
" in the Thames water — 45.2 — 37"	

a From 13 observations daily. b Sun.

RAIN, in inches, .03: sum of the daily observations taken at 9 o'clock.

Meteorological.—The mean temperature of the week was 4.4° below the monthly mean (39.8°).

BOOKS RECEIVED FOR REVIEW.

Continued from October 8th.

Matteucci's Lectures, by Dr. Pereira.—Turner's Chemistry, by Liebig and Gregory, 8th edition; Part 2d, Organic Chemistry.—On Ringworm: its causes, pathology, and treatment, by E. Wilson, F.R.S.—A System of Practical Surgery, by J. Lisarz, 2d edit. Edinb.—Yearsley on Deafness, and the treatment of Diseases of the Ear.—Lallemand on Spermatorrhoea, translated by M'Dougall.—Tables for Students, by W. E. C. Nourse.—On Diseases of the Chest, by Peyton Blakiston, M.D.—The late Inquest at Putney, by John Farmer.—Dr. Arnott on Indigestion.—Dr. Todd's Cyclopaedia of Anatomy and Physiology, Pt. 59.—Koecker's Essay on Diseases of the Jaws, by Dr. Mitchell.—Researches on Asiatic Cholera, by Dr. E. A. Parkes.—Dr. Craigie's Elements of General and Pathological Anatomy.—Remarks on the Value and Necessity of Statistics in Operative Surgery, by J. Y. Simpson, M.D.—Observations on Pleuritis and Empyema in Children, by F. Battersby.—Nouvelle Branche de Physique, par F. H. Boutigny.—Revue retrospective des Cas judiciaires.—Portraits of Diseases of the Skin, by Erasmus Wilson, F.R.S.—Calendar of the Queen's College, Birmingham.—Dr. Wright's Inaugural Address, Birmingham Pharmaceutical Institution.—Cosmos, Vol. 2, Pt. 1, Sabine's translation.—Vision in Health and Disease, by A. Smee, F.R.S.—Pathology and Practice of Surgery, by James Syme.—Medical Reform, by J. Hodgkin, M.D.—Health of Towns' Magazine, No. 7, Dec. 1847.—Fowner's Manual of Chemistry, 2d edit.—Taylor on Poisons, in relation to Medical Jurisprudence and Medicine.—Liebig on the Chemistry of Food.—Beasley's Pocket Formulary.—History, Diagnosis, and Treatment of the Fevers of the United States, by Elisha Bartlett, M.D.—Water-Cure Journal, No. 5, December 1847.—A Popular Essay on Anæsthetic Agents, by W. H. Mortimer.—Speech of the Count de Montalembert on the French Medical Reform Bill.—Du Choléra, Moyens Préservatifs et Curatifs, par A. M. Bureaud-Riofrey.—Ventilation illustrated: A tract for the Schools of the Rich and Poor.—Principles of Nature and her Divine Revelations by and through Andrew Jackson Davis. 2 vols.—The Cholera not to be arrested by Quarantine, by Gavin Milroy, M.D.—Answers to Religious Objections to the Employment of Anæsthetic Agents, by J. Y. Simpson, M.D.—A few Remarks and Suggestions on the present State of Ireland, by the Marquis of Sligo.—Report on the People's International League.—Medical Discourses, by John Ware, M.D.—Grundsätze der Experimentalphysik, von Dr. H. Buß, Heidelberg 1847.—Untersuchungen über den rasch verlaufenden Wasserkopf, von Karl Herrich.—Der plötzliche Tod aus inneren Ursachen, von Karl Herrich und Karl Popp, Regensburg, 1848.

NOTICES TO CORRESPONDENTS.

Dr. Charles Bell's paper on Cholera will appear in the following number.

The space occupied by the Index has compelled us to postpone various communications.

INDEX TO VOL. V. OF THE NEW SERIES.

- Abdomen, punctured wound of the, Mr. W. Coates' case of recovery from, 933.
- Abscess, Mr. Holman on a case of, following pregnancy, 498.
- Abscess of the heart, Mr. Stallard on the pathology of, 511.
- Abscesses, Dr. Darby on the treatment of, by seton, 908.
- Acephalocysts in the heart, 175.
- Aconitum napellus, Mr. Grantham on the therapeutic effects of the external application of the, 251.
- Action for the loss of an eye, report of the trial, Keeley v. O'Connel, 1040.
- Adams, Dr. Francis, on the construction of the placenta, and the mode of communication between the mother and the foetus in utero, 155, 194, 287, 378, 421.
- Age for medical study, royal ordinance of France as to the, 489.
- Albuminuria, or the morbus Brightii, Dr. G. Owen Rees on, 182.
- Albuminuria, Dr. G. Owen Rees' lectures on, 271, 365.
- Alexander's, Dr. case, in which death followed a wound of the heart, after eight hours, 520.
- Allen's, Mr. observations on strangulated hernia, 628.
- Anæsthetic agent, a new, Professor Simpson's discovery of, more efficient than sulphuric ether, 934.
- Analysis of the soil of a burial ground supposed to contain arsenic, 601.
- Andover Union, digest of the evidence taken before the Select Committee of the House of Commons on, 213.
- Andral, M. on the nature of the fæcal evacuations in cholera, 732.
- Aneurism of the arch of the aorta, Dr. Bellingham's case of, 87.
- Aneurism, inguinal, Mr. Cæsar Hawkins on, 317.
- Aneurism of the aorta, Dr. C. J. Hare's cases of, 664, 704, 794, 881.
- Apothecaries' Hall: lists of gentlemen to whom certificates have been granted, 42, 86, 128, 174, 218, 306, 340, 350, 393, 438, 480, 517, 564, 599, 641, 659, 708, 757, 787, 907, 937, 997, 1051, 1086, 1123, 1154.
- Apothecaries' Society, botanical prizes of the, 996.
- Apothecaries' Society, trial of a student for forging the certificate of the, 995.
- Appointment, medical, 126.
- Arit, Dr. on the structure of the conjunctiva, 352.
- Army medical statistics, neglect of, 506.
- Arnott's, Mr. case of malignant disease of the uterus, 1068.
- Arnott, Dr. on indigestion, reviewed, 1063.
- Arrowsmith's, Dr. fatal case of dysphagia, 165.
- Arsenic, medical report on a case of poisoning by, 126.
- Arsenic, medical evidence in a case of poisoning by, 257.
- Arsenic, trial for murder by poisoning (with, 555.
- Arsenic, analysis of the soil of a burial-ground supposed to contain, 601.
- Arsenic, prohibition of the sale of, 602.
- Arsenic, restriction of the sale of, 780.
- Arsenic, embalming with, 845.
- Arsenic, cases of poisoning with, 515.
- Ascarides, ferri cyanuretum in the treatment of, in the rectum, 78.
- Ascites, Dr. Dyster's case of spontaneous cure of, 154.
- Astley Cooper prize, 126, 281.
- Atlee, Dr. on the duties of practitioners in reference to the poor, 518.
- Avery's, Mr. case of tumor of the lower jaw, 851.
- Avery's, Mr. case of aneurism of the aorta, 1072.
- Babington, Dr. on medical attendance on the sick poor in Ireland, 513.
- Bagot, Dr. on the employment of tartar emetic in phthisis, and of mercury in the vomiting which occurs during pregnancy, 479.
- Barker's, Dr. case of large secondary prostatic calculus, 512.
- Barrett's, Mr. case of spontaneous rupture of the uterus, from thinness of its parietes, 638.
- Bastick's, Mr. notice of a singular decomposition of distilled waters, 507.
- Beales, Mr. on a case in which asphyxia and convulsions followed the employment of chloroform, 1117.
- Beck, Dr. on the effects of emetics on young subjects, 351.
- Beck, Dr. on the adulteration of various medicines in medicine and the arts, reviewed, 848.
- Beef-tea, recipe for making, 213.
- Bell, Dr. G. Joseph, notice of death of, 42.
- Bell's, Dr. case of rheumatism, 599.
- Bell, Mr. C. W. on the advance of the Asiatic cholera, with suggestions for its treatment, 797.
- Bellingham's, Dr. case of spontaneous cure of aneurism of the arch of the aorta, 87.
- Benevolent fund of the provincial association, 1151.
- Bengal medical college, flourishing state of the, 126.
- Bennett's, Dr. Risdon, case of disease of

- the agminate and solitary glands of the ileum, 853.
- Bennett, Dr. Hughes, on the typhus fever prevalent in Edinburgh, 1125.
- Benach, Dr. on the composition of the milk of carnivorous animals, 1129.
- Benson, Mr. on coroners and their victims, 1149.
- Bently, Mr. appointment of, as successor to Mr. Quekett, at the London Hospital, 251.
- Biographic al notice of the late E. J. Quekett, Esq. 86.
- Births and deaths in the metropolis, tables of, 44, 88, 132, 176, 220, 264, 308, 352, 396, 488, 480, 522, 564, 604, 648, 692, 736, 780, 822, 866, 910, 954, 998, 1042, 1086, 1130, 1154.
- Bird's, Dr. Golding, case of aortic aneurism, 853.
- Bird's, Dr. Frederic, case of extirpation of both ovaries, 814.
- Birkett's, Mr. account of the structure of a nævus, 168.
- Birkett's, Mr. case of strumous disease of the testicle, 774.
- Birkett's, Mr. case of constriction of the ileum, 1072; of double vagina and uterus, 1072; of diseased auricle, 1072.
- Bite of a viper, remedy for the, 127.
- Black's, Dr. case of fatal phlebitis of the inferior vena cava, 518.
- Blakeman's, Dr. cases of croup, 1128.
- Bleaching of lace, dangerous effects produced by the 1121.
- Blows on the head with the fist, cases where immediately fatal effects were produced by, 219.
- Bones, carious, analysis of, 118.
- Botanical prizes of the Apothecaries' Society, 906.
- Bowman's, Mr. lectures on ophthalmic surgery—see Ophthalmic Surgery, Mr. Bowman's lectures on.
- Branding of deserters, injustice of requiring this to be performed by medical officers, 206, 215.
- British Association at Oxford, proceedings of the Physiological section of the, 169.
- Brown-Segard, M. on the direct influence of light and heat on the action of the iris, 1041.
- Broussais, M. Casimir, notice of the death of, 128.
- Buchanan, Dr. on the physiological effects of the inhalation of ether, 929.
- Budd, Dr. W. appointed physician to the Bristol Infirmary, 847.
- Budge, Professor, on striped muscular fibre in the stomach of the loach, 865.
- Burns and scalds, Mr. Bransby B. Cooper on, 397.
- Burning, alleged murder by, 516.
- Barrows', Dr. address to the students of St. Bartholomew's Hospital, 1035.
- Burrows', Dr. evidence before the select committee of the House of Commons, 1121.
- Callaway, Mr. resignation by, of the office of senior assistant surgeon at Guy's Hospital, 676.
- Candour and sincerity in medical practitioners, necessity for, 735.
- Cantharides, production of albuminous urine by, 41.
- Capezzuoli, M. on the changes in composition undergone by the contents of hens' eggs before and after incubation, 43.
- Carruthers, Dr. of Dundee, obituary notice of, 998.
- Chandler, Mr. Bentham, on chloroform in spasmodic asthma, 1105; on a case of "congestion" in an infant, 1106.
- Charter of the College of Surgeons, correspondence on the proposed new, 214.
- Chelius' system of surgery, review of, 208, 725.
- Chemistry and the microscope, Dr. Day's lectures on:—
- Lect. 1.—The chemical constituents of the animal organism; their division into the inorganic and the organic; subdivision of the inorganic group into (1) those which are serviceable from their physical properties, water, phosphate of lime, carbonate of lime, phosphate of magnesia, fluoride of calcium, and silica; (2) those which effect important objects by their chemical actions, chloride of sodium, chloride of potassium, phosphate of soda, phosphate of potash, carbonate of soda, carbonate of potash, chloride of calcium, and iron; (3) incidental constituents; reasons for the omission of certain substances, 276.
- Lect. 2.—Quantitative analysis of the constituents of the ash left on the incineration of animal solids and fluids. Organic constituents of the body; protein; how obtained; state in which sulphur exists in it; its formula; the oxides of protein; the general distribution, and uses of protein in the organism; albumen; fibrin; casein; globulin, 358.
- Lect. 3.—Gelatinous tissues; properties of areolar or cellular tissue; gelatin; its identity of composition with the substances yielding it; its chemical composition and properties; explanation of the action of drugs containing tannin on the organism; origin of the gelatinous tissues in the body; products of their decomposition; gelatin yields prussic, acetic, valeric, and benzoic acids, besides certain essential oils, when oxidized; leucine; glycocoll, or gelatin sugar; Mulder's views regarding the probable use of sugar; chondrin; physiological connection between the tissues yielding chondrin and gelatin; extractive matters; creatine; creatinine; sarcosine; inosinic acid, 446.
- Lect. 4.—Animal colouring matter; blood pigments; hæmatin; the same in arterial and venous blood; its composition and chemical character; proof that the

- red colour is not dependent on the iron; state in which iron exists in it; combining proportions of hæmatin and globulin; its origin, and the products of its decomposition; its diagnosis; hæmaphæin; bile-pigment; biliphæin or cholepyrrhin, its composition and chemical characters; biliverdin; bilifulvin; urine-pigment; identical with extractive matter; its composition contrasted with that of the colouring matters of blood and bile; uses of the pigments generally. Bilin; two theories regarding the composition of the bile; Pettenkofer's test for bile; quantitative test for bile by means of it; origin of bilin. Substances peculiar to the urine; urea; its composition and chemical characters; its conversion into carbonate of ammonia; the application of this reaction to determine its amount; nitrate of urea; Ragsky's mode of detecting very small quantities; oxalate of urea; chloride of sodium and urea; origin of urea; views of Prout, Liebig, and Simon; on the manner in which urea is eliminated from the system after extirpation of the kidneys; the folly of prescribing urea as a special diuretic, 529.
- LECT. 5.—Uric acid; its composition; test for its presence; the various forms of its crystals; its mode of crystallizing; its metamorphoses; production of allantoin, urea, and oxalic acid from it; urates of potash, soda, ammonia, magnesia, and lime; hippuric acid; its characters and composition; the connection between hippuric and benzoic acids, and glyocol; cyatin, 614.
- LECT. 6.—The sugars; cane-sugar; grape or diabetic sugar; sugar of milk or lactine; their composition; sources; distinctive properties as regards crystallization; solubility; their action on alkalies, and on hydrated oxide of copper; their difference in relation to fermentation; polarization; singular compound of grape-sugar and chloride of sodium, 872.
- LECT. 7.—Fats; their division into saponifiable and non-saponifiable; general character of free or neutral fats; mode of distinguishing one from another; table of fusion-points of ordinary fatty matters; fatty acids; their general characters; soaps.—Stearic acid; margaric acid; oleic acid; butyric, caproic, caprylic, capric and vaccinic acids; phosphoglyceric acid; glycerin; stearin; margarin; olein.—Non-saponifiable fats; cholesterol; serolin.—The formation of fat; views of Liebig and Dumas, 964.
- Chevers', Dr. Norman, collection of facts illustrative of the morbid conditions of the pulmonary artery, as bearing upon the treatment of cardiac and pulmonary diseases, 753, 835, 1011, 1098.
- Child-delivery, Dr. Joos' description of a new instrument for, 720.
- Chlorine, destruction of the poison of cholera by, 688.
- Chlorine as a disinfectant in cholera, 777.
- Chloride of formyle, Dr. Pereira's historical notice of the, 953.
- Chloride of olefiant gas, formerly called chloric ether, 996.
- Chloroform, Dr. Saffuel Thomson on the preparation of, 992; editorial observations on the employment of, 985; account of the success of the employment of, in the London hospitals, 996; operation for strangulated hernia, by Mr. Stafford, while the patient was under the influence of, 1014; remarks respecting, 1030; Mr. Ghymes' suggestions on the inhalation of the vapour of, 1081; Dr. Glover on the physiological properties of, 978; Mr. Gull's operation under the influence of, 1036; experiments with, in Paris, 1039; test of the presence of alcohol in, 1092; Mr. B. Chandler on the employment of, in spasmodic asthma, 1106; Mr. Alfred S. Taylor on the chemical properties of, 1119; vapour, experiments on the action of, 1123; injurious effects of, 1152; on the discovery of, 1153.
- Chloroformization in dentistry, Mr. Stokes on, 993.
- Cholera, Asiatic, in the Caucasus, 294; chlorine as a disinfectant in, 777; M. Andral on the fecal evacuations in, 732; acts for the prevention of, 1083; destruction of the poison of, by chlorine, 688; payment of medical men for services during the, 951; prevention of, 1036; intelligence respecting the progress of, in India, 259; editorial observations on the advance of the, 597; progress of the, 517, 640, 687, 721; editorial observations on the present state of our knowledge of the treatment of, 677; Mr. Bell on the, with suggestions for its treatment, 797; progress of the, in Russia, 777, 819, 861, 906, 951, 981, 996, 1037, 1122, 1150; alleged appearance of, in the metropolis, 1027.
- Cholera, spasmodic, Mr. Wilde's case of, 888.
- Chowne, Dr. on the source of hæmorrhage in partial separation of the placenta, 168.
- Ciliary muscle, description of the, by Dr. Todd and Mr. Bowman, 647.
- Circumcision of females in Western Africa, Mr. Daniell on the, 375.
- Civiale's treatise on lithotritry, reviewed, 300.
- Clark's, Dr. cases of malignant puerperal fever, 331.
- Clendon, Mr. on improvements in the dental forceps, 1035; on the occurrence of a triple central incisor tooth, 626.
- Climate of the West of England, 826.
- Clutterbuck, Dr. on the prevalent fever, 686.
- Coates', Mr. case of recovery from a punctured wound of the abdomen, 933.
- Cock, Mr. appointed surgeon to Guy's Hospital, 952.

- Cock, Mr. Edward, presentation of a memorial to, 1022.
- Cock's, Mr. case of rupture of the kidney, 1071.
- Cogswell's, Dr. history of chloroform, 1079.
- Coley, Dr. James Milman, on the lymphatic tumor in the female breast, 454.
- Coley, Dr. on the pathology and treatment of hysteria, 586, 623.
- Coley's, Dr. case of tumor of the spleen; of ulceration of the glottis, 1074.
- College of Surgeons, election of fellows at the, 1123.
- Collieries, explosions in, 126.
- Collett, Mr. on the employment of ipecacuanha in the bites of venomous animals, 664.
- College of Surgeons, supplemental charter to the, 204.
- Confinement, solitary, effects of, 603.
- Concentrated manure nuisance, editorial observations on the, 1026.
- Conjunctiva, Dr. Arit on the structure of the, 352.
- Consumption, a new cure for, 217.
- Convicts at Woolwich, editorial observations on the treatment of the, 583, 427.
- Concretion, analysis of a, found in the aorta, 69.
- Contagious diseases prevention act, and dealers in patent concentrated manure, 1038.
- Concours in France, abolition of the, 127.
- Cooper's, Mr. Bransby B. course of lectures on surgery—see Surgery, Mr. Bransby B. Cooper's lectures on.
- Copland, Dr. on morbid sympathies—see Morbid sympathies, Dr. Copland on.
- Copper, a normal constituent in the human body (?), 84.
- Corpus luteum, Dr. Meigs on the vitellary nature of the, 51.
- Coroners' inquests, fees to medical witnesses at, 305; editorial article on, 115.
- Coroners' inquests, defective, remarks on, 820.
- Coroners' inquests, Mr. Synnot on the improper treatment of medical witnesses at, 994.
- Coroners' inquests, editorial observations on the neglect of post-mortem examinations at, 1024.
- Coroners, expenses of, and fees at inquests, report of the case *Reg. v. the Justices of Carmarthenshire*, 1040.
- Cough, nocturnal, in infancy, on the treatment of, 391.
- Crisp, Mr. Edwards, note from, 437.
- Crisp, Mr. on the structure, diseases, and injuries of the blood-vessels, 387.
- Crisp's, Mr. case of polypus of the uterus, 850.
- Crisp, Mr. on serous cysts, 946.
- Critchett's Mr. case of tumor of the abdominal parietes, 856.
- Curran, the late Dr. biographical memoir of, 641.
- Cyclopædia of anatomy and physiology, review of part 29, 1065.
- Daniell, Mr. W. F. on the circumcision of females in Western Africa, 374.
- Darby, Dr. on the treatment of abscesses by seton, 908.
- Davies', Dr. case in medical jurisprudence; evidence of live birth in cases of suspected child-murder, 1022.
- Day, Dr. on the state of the blood in phthisis ventriculosa, 96.
- Day, Dr. G. E., on Chemistry and the Microscope, in relation to practical medicine—see Chemistry and the microscope, Dr. Day's lectures on.
- Dean, Mr. on the growth of fungus in the stomata of cactus niger, 81.
- Death of medical officers from fever, 515.
- Deaths, a table of the, in London, from all causes, registered in the quarters ending September 1846-17, 821.
- Degree of bachelor of medicine, gentlemen who have passed the second examination for the, at the London University, 996.
- Degrees, honorary, of the Royal College of Physicians, editorial remarks on the suggestions for conferring, 469.
- Delirium tremens, Dr. Soltan on, 246.
- Dental Surgery, Mr. Tomes's lectures on:—
 Lect. 13.—Diseases of the dental pulp (continued); granulation or polypus of the pulp; its nature and treatment; recession of the pulp; diseases of the dental periosteum: inflammation, acute and general; chronic and partial; symptoms and treatment, 410, 451.
 Lect. 14.—Abnormal conditions of the alveoli; necrosis; alveolar exostosis; absorption of the alveoli. Diseases of the gums; inflammation, acute and chronic, of the gums; ulceration of the gums; tumors of the gums; epulis; polypus; vascular tumors of the gums; blue gum; salivary calculi, or tartar, 551.
 Lect. 15.—Operations on the teeth; scaling the teeth; pivoting or grafting teeth; plugging or stopping teeth; on the extraction of teeth; general rules to be observed; on extracting incisors, canines, bicuspidæ, and molars; the extraction of stumps, 918, 1005.
 Lect. 16.—The necessity of mastication either by natural or artificial teeth.—The construction of artificial teeth; the adjustment, the use, and the means to be adopted for their preservation.—Conclusion of the course, 1093.
- Diabetes mellitus, Dr. Elam on some points connected with the history, pathology, and treatment of, 292, 324.
- Diabetes mellitus, Dr. G. O. Rees on, 365.
- Dick's, Dr. *miscellanea medica*, 19, 334, 709, 1102, 1137.
- Dieffenbach, M. obituary notice of, 953.
- Dieffenbach, the late Dr. and the operation for strabismus, 1082.

Diploma, bold stroke for a, 77.

Diseases, organic, in the lower animals, M. Heusinger's observations on the, 262.

Discovery of truth in science, 445.

Diseases of infancy and childhood, Dr. West's lectures on the:—

LECT. 5.—Inflammatory affections of the brain; frequent in childhood, but overlooked by early writers; first noticed about a century ago; described under the name of acute hydrocephalus by Dr. Whytt. Progress of knowledge with reference to acute hydrocephalus; the name restricted in these lectures to scrofulous inflammation of the brain, which is much more frequent than in its simple inflammation in childhood. Morbid appearances in acute hydrocephalus; due either to inflammation or to tubercular deposit; alterations more apparent in the membranes at the base of the brain than in those at its convexity; reasons for considering granulations of the membranes as tubercular; increase of fluid in the ventricles almost invariable. Central softening of the brain; not a post-mortem alteration; frequently connected with changes in the lining of the ventricles. Symptoms of the three stages of the disease, 1—9.

LECT. 6.—Hydrocephalus (continued); diversities in its course and in its mode of attack; insidious approach in phthisical subjects; resemblance of its symptoms to those of intermittent fever, of simple gastric disorder; serious import of continued fever in cases of gastric disorder. Prognosis; disease almost always fatal; appearances of improvements often delusive; cautions against being misled by them. Duration of the disease; real nature of cases of waterstroke. Treatment; prophylaxis; treatment of the disease; rules for depletion, for use of purgatives, mercurials, application of cold; diet of patients; circumstances under which opiates may be useful; when blisters are to be applied; conclusion, 89—96.

LECT. 7.—Simple inflammation of the brain; its differences from hydrocephalus; occasional extreme rapidity of its course; cases in illustration; morbid appearances; frequent connection with meningitis of the cord; extreme rarity as an idiopathic affection; treatment. Inflammation of the brain succeeding to disease of the ear; digression concerning otitis; its symptoms; distinctions between it and inflammation of the brain; treatment. Chronic diarrhœa, with disease of the temporal bone; case. Phlebitis of the sinuses of the dura mater; circumstances under which it occurs; it sometimes succeeds to large collections of pus in distant organs; cases in illustration, 177—182.

Chronic hydrocephalus; various con-

ditions under which fluid collects in the skull; chiefly a disease of early infancy; symptoms, changes in form and size of the head, and their mode of production; course of the disease; termination almost always fatal. Post-mortem appearances; internal hydrocephalus; cerebral substance not destroyed; changes in the ventricles. External hydrocephalus; circumstances under which it exists. Treatment; importance, but difficulty, of distinguishing curable and incurable cases, and external from internal hydrocephalus; Gölis's plan; compression; puncture; cases suited for each mode of treatment, 265—270.

LECT. 9.—Hypertrophy of the brain; usually associated with general disorder of nutrition; symptoms and course; seldom directly fatal; nature of change in brain; alterations in form of skull, and difference from chronic hydrocephalus; treatment; partial hypertrophy. Atrophy of the brain; case illustrative of its defective development; wasting of the brain in protracted illness; temporary retrocession of mental powers in children after long illness; case of partial atrophy, 353—358.

LECT. 10.—Hydrocephaloid disease; often succeeds to sympathetic disturbance of brain in course of various affections; supervening on diarrhœa, pneumonia, and cerebral congestion; diagnosis under each of these circumstances; prophylaxis, and treatment. Tubercle of the brain; its frequency in childhood; its anatomical characters; symptoms; occasionally absent; generally very obscure; diversities in this respect cannot be explained by the morbid appearances; occasional recovery where symptoms of cerebral tubercle have long existed; treatment. Hydatids and cancer of the brain, 439—445.

LECT. 11.—Diseases of the spinal cord; their study rendered more difficult by the tender age of children. Irritation and congestion of the cord. Inflammation of the membranes of the cord; sometimes not common as a sporadic affection; illustrative cases; inflammation of the substance of the cord; extremely rare in its acute form; in its chronic form gives rise to symptoms similar to those which occur when bones of the spine are diseased; cases. Trismus; extremely rare in this country; symptoms; post-mortem appearances; uncertainty as to natural vascularity of the cord in early infancy; causes of the disease; influence of vitiated air; treatment almost hopeless, 523.

LECT. 12.—Night terrors; usually depend on intestinal disorder, not on primary disease of the brain; their symptoms not to be mistaken for those of incipient hydrocephalus; sometimes continue to occur for many weeks; treatment. Epilepsy;

a disease of youth rather than of childhood; frequently recurring convulsions in childhood never to be neglected. Chorea; often connected with disorders of approaching puberty; not peculiar to childhood; principles of treatment; partial chorea. Paralysis; sometimes congenital; often follows very slight and temporary symptoms of cerebral disturbance; most frequent during process of dentition; recovery very uncertain; great importance of early treatment; serious results of its remaining uncured; diagnosis; treatment. Facial hemiplegia in new-born infants, 605—613.

LECT. 13.—Diseases of the respiratory organs, their frequency and fatality; peculiarities of the respiratory function in early life; causes of the rapid pulse and quick breathing in infancy; feebleness of the inspiratory power, and consequent tendency to collapse of the lung. Imperfect expansion of the lung; sometimes congenital; appearance of the lung; influence of inflation upon it; its causes and symptoms; case of its fatal termination; case of recovery from it; diagnosis from congenital phthisis; treatment, 693—699.

LECT. 14.—Collapse of lung that has once been expanded; described as lobular pneumonia by various writers; its characters; symptoms and differences from true pneumonia; observations of Bailly and Legendre; is not to be regarded as a post-mortem occurrence; illustrative cases; instances of its occurrence in the adult; similar causes tend to produce it at all periods of life; hence very frequent in old age. Induration of the cellular tissue; its characters; remarkable reduction of temperature that attends it; appearances after death; condition of deficient expansion, or of collapse of the lung, noticed by many observers, though misunderstood by most, is probable cause of the induration, or œdema of the surface, 781—787.

LECT. 15.—Affections of the respiratory mucous membrane; comparative rarity of catarrh during the first weeks of life; coryza, simple and pseudo-membranous, or malignant; catarrh, causes adding to its importance in early life; its treatment; danger of bronchitis or pneumonia. Post-mortem appearances of bronchitis; redness of the membrane; nature of the contents of the bronchi; dilatation of their cavity; extension of the inflammation to the lining of the pulmonary vesicles, producing vesicular bronchitis. State of the lungs in bronchitis; frequency of congestion; carnification of some lobules; possible extension of inflammation to the pulmonary tissue, producing lobular pneumonia; supuration of these patches producing vomica, 867—872.

LECT. 16.—Lobar pneumonia; more common in early life than has been supposed; its general characters the same as in the adult; some appearances deserving special notice, viz. sub-pleural ecchymoses, pneumonic abscess, and emphysema of the uninflamed portions of the lung.—Frequency and causes of inflammation of the respiratory organs; influence of age; of previous attacks; of various diseases.—Symptoms of ordinary bronchitis; a more serious disease than in the adult, and why; symptoms of capillary bronchitis; illustrative case; results of auscultation.—Treatment of bronchitis; rules for depletion, and the use of antimony; the dyspnoea not always dependent on severity of the inflammation; treatment of this nervous dyspnoea; treatment of bronchitis in its chronic stage, 935.

LECT. 17.—Pneumonia continued, 1043.

LECT. 18.—œdema of the lungs; difference between characters of œdematous and hepatized lung; treatment; gangrene of the lung; pleurisy; treatment; chronic pleurisy, 1131.

"Dislocation," legal meaning of the term, 906.

Disinfecting fluids, experiments on, 952.

Disinfecting mania, editorial observations on the, 939.

Distilled waters, notice of a singular decomposition of, 507.

Doctor of medicine, honorary degree of, 349.

Doubtful sex, case of, with menstruation through the penis, 562.

Doubtful sex, case of, 643.

Dropsy, extra-peritoneal, case of, 907.

Druggists, regulation of, in Turkey, 603.

Dublin dissector, reviewed, 634.

Duke of Praslin, the case of the, 458.

Duke of Praslin, editorial remarks on the case of the, 469.

Duties and responsibilities of the medical officers of poor-law unions, 40.

Duties of practitioners in reference to the poor, 518.

Dyster's, Dr. case of spontaneous cure of ascites, complicated with ovarian disease, 154.

Edinburgh Infirmary, mortality in the, 1086.

EDITORIAL ARTICLES:—Medical reform in France, 25; a dealer in medical practices, 26; insufficient remuneration of Irish medical practitioners, 27; medical attendance under the English poor-law, 28; conclusions respecting Dr. McWilliam's report on the African fever, 75; a bold stroke for a diploma, 77; medical fees at coroners' inquests, 115; medical men as members of the House of Commons, 160; supplemental charter to the College of Surgeons, 204; remuneration of Irish medical practitioners in fever cases, 204;

- salaries of medical officers of poor-law districts, 205; branding of deserters by army medical officers, 206; fees allowed under the new County Courts Act, 207; mortality from fever in the metropolis, 208; correspondence on the supplemental charter, 252; homœopathic theory *versus* homœopathic practice, 294; defence of medical witnesses by a judge, 337; treatment of convicts in the hulks at Woolwich, 383, 427; honorary degrees of the Royal College of Physicians, 467; the murder of the Duchess of Praslin, 469; on the necessity of limiting the number of medical practitioners, 503; on the neglect of army medical statistics, 506; the sanitary commission—drainage of the metropolis, 549; medical responsibility, 552; results of interments in towns, 552; advance of the Asiatic cholera, 592; on the revival of the jury of matrons, 597; mortality among Irish medical practitioners, 631; on the present state of knowledge of the treatment of cholera, 677; medical relief to the poor, 722; report on medical registration, 724; the unhealthiness of London, 761; state of the profession in Ireland, 765; sanitary condition of England and Wales, 808; the Medical Convention and Poor-law Union salaries, 811; neglect of sanitary measures in North Shields, 845; medical ethics, 894; the substitute for ether vapour, 938; the disinfecting mania, 939; treatment of medical men by town councils, 940; the epidemic influenza, 981; progress and mortality of the cholera in Russia, 981; chloroformization, 986; state of the public health in the metropolis, 1023; neglect of post-mortem examinations at coroners' inquests, 1024; the concentrated manure nuisance, 1026; alleged appearance of Asiatic cholera in the metropolis, 1027; an attempt to nullify the medical witnesses' act, 1060; cholera in Russia, 1062; increased mortality in the metropolis, 1110; an Irish inquest, 1110; on the plea of insanity, 1141; remarks on the conclusion of another volume, 1142.
- Effluvia trap, a new, 466.
- Elam, Dr. on some points connected with the history, pathology, and treatment of diabetes mellitus, 292, 324.
- Electric fluid, remarkable effect of the, 997.
- Electric fluid, velocity of the, 1005.
- Ellerman's patent disinfectant, experiments with, 821.
- Emanations, gaseous, 198.
- Embalming with arsenic, 845.
- Embling, Mr. on the climate of the west of England, 820.
- Emetics, Dr. Beck on the effects of, on young subjects, 351.
- Emigrant fever, deaths from, 1039, 1039.
- Emigrant fever in Canada, mortality from the, 777.
- Entozoa, or worm-aneurism, Dr. Mercer on, 645.
- Epizootic, a new—appearance of the small pox in sheep, 603.
- Epilepsy, accidental cure of, by oil of turpentine, 808.
- Epsom salts, a pleasant substitute for, 85.
- Epididymis, animals which possess an, 337.
- Erysipelas, Mr. Higginbottom on the use of the nitrate of silver in the cure of, 1544.
- Ether, Mr. Wilkinson on the employment of, in cases of spinal irritation, 35; prohibition of the use of, by the lower grade of medical practitioners, 85; strangulated hernia reduced under the influence of, 115; alleged rape perpetrated on a female while under the influence of, 259; a sponge the best means of administering it, 349; the vapour applied by a bladder and sponge, 474; Mr. Wells' remarks on the results of the inhalation of, in one hundred and six cases, 547; Dr. Smith's cases of, with remarks, 589, 591; on the inhalation of, in cases of insanity, 642; Dr. Roaz on the application of, in midwifery, 676; Dr. Snow's work on, reviewed, 812; note by, in reply to the reviewer, 859; discovery of a substitute for, by Professor Simpson, 906; Dr. Buchanan on the physiological effects of the inhalation of, 929.
- Ether vapour, editorial observations on the substitute for, 938.
- Etherization of vegetables, 127.
- Excise laws, influence of the, on pharmacy, 36.
- Excreta, value of that of the inhabitants of Sheffield, 1083.
- Eye-ball, Mr. Lawrence's clinical lecture on organic diseases of the, 9.
- Farr's, Mr. case of emphysematous tumor within the posterior labium of the uterus, 302.
- Farr's, Mr. case of rudimentary testes in a man, 857.
- Farr's, Mr. case of aneurismal dilatation of the ascending aorta, 992.
- Fat, variations of the quantity of, in the human lungs, 604.
- Fees allowed under the new County Courts' Act, 207.
- Fees to medical witnesses at coroners' inquests, 305.
- Fees to medical men at coroners' inquests, report of the case *Synnot v. Mills*, 1080.
- Fergus's, Mr. case of extensive laceration of the liver, 1068.
- Fergusson's, Mr. case of hypertrophy of the heart, with patency of the aortic valves, in a horse, 690.
- Fever hospitals' bill, 127.
- Fever, mortality from, in the metropolis, 208.
- Fever, Dr. Laycock's clinical lecture on certain complications of, 787.
- Fever in emigrant ships, 393.

- Fever, death of medical officers from, 515.
 Fever in Edinburgh, 639.
 Fever, prevalence of, in Edinburgh, 888.
 Fever, continued, Dr. Hughes on the, as at present existing in the metropolis, 923, 970.
 Fleisch, Dr. on softening of the intestinal mucous membrane in children, 1127.
 Fletcher's, Mr. case of valvular disease of the heart, 837.
 Fletcher's, Mr. case of caries of petrous portion of temporal bone, &c. 991.
 Flood, Dr. Valentine, subscription for the widow and family of, 1084.
 Flourens, M. on the effects produced by the injection of various substances into the arteries, 350.
 Forgery of the certificate of the Apothecaries' Society, trial of a student for, 995.
 Fouquet, M. on the nature and cause of cadaveric rigidity, 128.
 Fowler, Dr. on the blind and deaf and dumb, 302.
 Fownes', Mr. manual of elementary chemistry reviewed, 1144.
 Francis's, Dr. case of obliteration of a considerable portion of the vena cava, 600.
 France, Mr. appointment of, as surgeon to the Eye Infirmary of Guy's Hospital, 780.
 Fracture, compound, of both legs, case of, 390.
 Fuller, Dr. on a remarkable case of spontaneous gangrene, 187, 242.
 Fuller's, Dr. case of disease of the aortic valves, 947.
 Gangrene, spontaneous, Dr. Fuller on a remarkable case of, 187, 242.
 Gastric juice, Dr. Day's analysis of the, 182.
 German Hospital, Dalston, disagreement amongst the parties connected with the, 907.
 Gestation, period of, 159.
 Gestation, a puzzling question on, 845.
 Ghrimes's, Mr. suggestions on the inhalation of chloroform vapour, 1081.
 Gisborne, Rev. Thomas, on the duties of physicians resulting from their profession, 80.
 Glover, Dr. on the physiological properties of chloroform, 978.
 Godfrey's cordial, case of poisoning by, 513.
 Grantham, Mr. on the therapeutic effects of the external application of the Aconitum napellus, 251.
 Grantham, Mr. on phosphatic deposits in the urine of children, 1037.
 Gray's Supplement to the Pharmacopœia, reviewed, 299.
 Graham, Professor, election of, in the Academy of Sciences, 126.
 Gull's, Mr. operation under the influence of chloroform, 1036.
 Gun-shot wound of the heart, case of, without perforation of the pericardium, 689.
 Gun-shot wounds, Mr. B. B. Cooper on, 309.
 Guthrie, Mr. on a peculiar injury of the upper end of the humerus, 168.
 Guthrie, Mr. on wounds and injuries of the abdomen and the pelvis, reviewed, 684.
 Guy's Hospital Reports, Vol. IV. 2d series, reviewed, 119, 1111.
 Hall's, Dr. J. C. remarks suggested by the case of Mary Hunt, 700.
 Hall, Dr. Marshall, on epilepsy, 854.
 Hanks, Mr. on the injurious effects of rumex acetosa, 69.
 Harrison's, Mr. case of congenital contraction of the intestines, 937.
 Harris, Dr. on a case of doubtful sex, with menstruation through the penis, 562.
 Hare's, Dr. Charles J. cases of aneurism of the aorta, with remarks, 664, 704, 794, 881.
 Harvey's, Mr. synopsis of the diseases of the human ear, reviewed, 554.
 Harveian medical society, election of officers, 721.
 Hassall's, Mr. microscopical anatomy of the human body, reviewed, 164.
 Hawkins', Mr. Cæsar, clinical lectures:—
 LECT. 3.—Division of ham string tendons for disease of knee-joint; the same with division of large cicatrix; extension of limb in cases of disease of hip-joint; dislocation of hip into thyroid foramen, complicated by old disease; abscess in anterior mediastinum; medullary disease of the testis, 58.
 LECT. 4.—Cases of ulceration and stricture of the rectum, and excrescences around the anus, 138.
 LECT. 5.—Cases of injury of neck resembling dislocation of vertebræ; chronic disease of cervical vertebræ; bone lodged five weeks in the œsophagus; fibrous tumor of the thigh, 236.
 LECT. 6.—Inguinal aneurism; ligature of external iliac artery; delirium; secondary hæmorrhage; cure, 317.
 LECT. 7.—Fractured ribs; inflammation of lungs and pericardium; fractured fibula; abscess of tibia; unredacted dislocation of femur; fungous disease of testis, removed; cases of wounded arteries and false aneurism; wounds of joints, 402.
 LECT. 8.—False aneurism in the thigh; hospital gangrene with hæmorrhage; medullary disease of the testis and abdomen, and lungs; uterine phlebitis and secondary abscesses; suppurating serous cyst of the neck, 489.
 Hawkins, Mr. Cæsar, on a peculiar form of subcutaneous tumor, 949.
 Haynes, Mr. Walton, election of, as surgeon to the St. Pancras Royal General Dispensary, 997.
 Heart, remarkable case of disease of the, in the horse, 690.

- Heller, Dr. on the detection of biliphæin in albuminous fluids, 1129.
- Heusinger, M. on the diseases of the lower animals, 262.
- Hepatic afferent vessels, Mr. Jackson on the, 626.
- Hernia, strangulated, cases of, operated for, unsuccessfully, 389, 391.
- Hernia, strangulated, reduced under the influence of ether vapour, 115.
- Hernia, strangulated, on the treatment of, 1107.
- Hewett's, Mr. Prescott, three cases of ulceration of the duodenum in burns, 849.
- Hewett's, Mr. case of fracture of the cricoid cartilage, 1070.
- Higginbottom, Mr. on the use of the nitrate of silver in the cure of erysipelas, 544.
- Holbrook, Dr. on the connection between the diseases of the lungs and skin, 82.
- Holmes', Dr. case of ulceration of the appendix vermiformis in a child, depending upon the presence of an earthy concretion, 646.
- Holmes', Dr. case of gun-shot wound of the heart, without puncture of the pericardium, 689.
- Holman, Mr. on a case of abscess following pregnancy, 498.
- Homœopaths, Mr. Edwin Lee on the practices of the, 392.
- Homœopathic theory *versus* homœopathic practice, 294.
- Homœopathy at the court of Spain, 1058.
- Horseflesh, use of, as food, 86.
- Hospital and infirmary reports, 308, 347, 389.
- Hughes', Dr. digest of one hundred cases of chorea treated in Guy's Hospital, 122.
- Hughes', Dr. case of supposed spontaneous perforation of the stomach, terminating successfully, 119.
- Hughes', Dr. case of perforating ulcer of the stomach, 770.
- Hughes, Dr. on the continued fever as at present existing in the metropolis, 923, 970.
- Hume, Dr. on learned societies, &c. reviewed, 79.
- Hunter's remarks on pneumonia, 413.
- Hydrocele, encysted, of the cord, successful operation for, 345.
- Hydrophobia, lecture on, by Mr. Bransby Cooper, 133.
- Hydrophobia from the bite of a cat, Mr. T. Spencer Wells' case of, 112.
- Hydrocyanic acid, Mr. Nunneley on the effects produced by, on animal life, 507.
- Hypertrophy of the brain in children, Dr. West on, 353.
- Hysteria, Dr. Coley on the pathology and treatment of, 586, 623.
- Idiots, the claims of, a new object for philanthropic efforts, 84.
- Ignorance of veterinary surgeons, 604.
- Inflammation, Dr. Robinson on the nature and principles of treatment of, 150, 417.
- Influenza, epidemic, editorial observations on the prevalence of the, 981.
- Influenza, Dr. Thomas Laycock's lecture on, 1050.
- Influenza, ages most liable to attacks of, 1084.
- Influenza and Asiatic cholera, on the supposed connection between, 1084.
- Influenza, duration of, 1122.
- Injection into the arteries, M. Flourens on the effects of, of various substances, 350.
- Inquest, an Irish, remarks on a late, 1110.
- Inquest proceedings at Cappermore, 1120.
- Insanity, longevity in, 217.
- Insanity, on the inhalation of the vapour of sulphuric ether in, 641.
- Intemperance in Dublin sixty years ago, 517.
- Iodine, detection of, in the testicles, 85.
- Iodine, poisoning by, 622.
- Intestines, Dr. Harrison's case of congenital contraction of the, 937.
- Interments in towns, editorial observations on the results of, 552.
- Ipecacuanha, employment of, in the bites of venomous animals, 664.
- Irish medical practitioners, editorial observations on the recent mortality among, 631.
- Iris, on the structure of the, 521.
- Irish, the, Board of Health, 822.
- Jackson, Mr. on the hepatic afferent vessel, 626.
- Jackson's, Mr. case of excessive constriction of the colon, 992.
- Jaundice, Dr. Stokes's case of, 307.
- Johnson, Dr. George, on inflammatory diseases of the kidney, 33.
- Johnson, Dr. George, appointed assistant physician to King's College Hospital, 952.
- Joos, Dr. description by, of a new midwifery instrument, 720.
- Jones, Dr. C. Handfield, on the origin and growth of certain concretions occurring in the prostate gland, 328.
- Jones's, Dr. C. Handfield, case of dysentery, 1070.
- Jones, Dr. C. H. on the typhloscole of the earth-worm, 1140.
- Jury of matrons, editorial observations on the revival of the, 597.
- Jury of matrons, another mistake by a, 681.
- Jury of matrons, the verdict of the, in the case of Mary Hunt, set aside, 861.
- Kennedy, Dr. on the connection between famine and fever in Ireland, 29.
- King, Dr. on the preservation of infants in delivery, reviewed, 79.
- King, Dr. on the appearances of the stomach after death, 122.
- King, Dr. on the signs, causes, and effects of scrofula, 803, 890, 1015.
- King's College Medical Society, officers for the ensuing year, 906.

- Lallemand, M. on spermatorrhœa, reviewed, 1029.
- Latham's, Dr. R. G. introductory lecture delivered at the Middlesex Hospital, 654.
- Lawrence's, Mr. clinical lecture on organic diseases of the eyeball, 9.
- Laycock, Dr. and Mr. Hudson, 128.
- Laycock's, Dr. clinical lecture on certain complications of fever, 787.
- Laycock, Dr. on epidemic catarrh, or influenza, 1050.
- Lee, Mr. Edwin, on the practices of homœopaths, 392.
- Lee, Mr. Edwin, on hydropathy and homœopathy, reviewed, 686.
- Lee, Dr. C. A. on the wide range of scientific pursuits, 522.
- Lee, Dr. C. A. on the duties of medical students, 522.
- Lerew, Mr. notice of the death of, 128.
- Lever's, Dr. case of polypus of the uterus, 850.
- Ligatures, on the application of, in the removal of tumors, 173.
- Lisfranc, the successor of, 126.
- Liston, Mr. notice of the death of, 1041.
- Liston, the late Mr. post-mortem examination of, 1082.
- Liston, Mr. successor to, 1125; obituary notice of, 1124.
- Lloyd's, Dr. case of malignant disease of the cæcum, 949.
- Lloyd's, Dr. case of ulceration of the intestines, 949.
- Lloyd, Dr. on strumous disease of the kidney, 1074.
- London and provincial medical directory, notice of the, 517.
- London Hospital Medical Society, lists of the officers of the, 778.
- Lonsdale, Mr. on lateral curvature of the spine, reviewed, 435.
- Longevity in insanity, 217.
- Lunacy, inconsistencies in the English law of, 893.
- Lunacy, report on, 1122.
- Lungs and skin, Dr. Holbrook on the connection between diseases of the, 82.
- Lymph of a horse, analysis of the, 498.
- Macilwain's, Mr. remarks on vivisection, reviewed, 471.
- McWilliam's, Dr. report on the African fever, conclusions respecting, 73.
- Madden, Dr. on the pathology and treatment of tubercle of the lungs, 282, 458, 494.
- Malgaigne, M. election of, as member of the Chamber of Deputies, 85.
- Manchester Medico-Ethical Association, election of officers for the, 1085.
- Manchester Pathological Society, papers read at the:—Dr. Watts on palpitation of the heart, in sympathy with cancer of the stomach, 301; Mr. Farr's case of fibrous tumor of the uterus, 302; Dr. Bell on rheumatism, 599; Dr. Francis's case of obliteration of the vena cava, 600; Dr. Watts's case of acute atrophy of the ascending aorta, 637; of acute hypertrophy of the, 638; Dr. Watts's case of dilatation of the air-tubes, 856; Mr. Farr's case of rudimentary testes in a man, 857; Dr. Renaud's case of dysentery, 857; Mr. Fletcher's case of valvular disease of the heart, 857; Mr. Fletcher's case of caries of petrous portion of temporal bone, &c. 991; Dr. Watts's case of tubercles in liver atrophied by cirrhosis, 991; Mr. Jackson's case of excessive constriction of the colon, 992; Dr. Renaud's case of tubercle in the testicle of a child two years of age, 992; Mr. Farr's case of aneurismal dilatation of the ascending aorta, 992; Dr. Watts on tubercle in fallopian tubes, 1115; Mr. Fletcher on painter's colic, 1116; Mr. Domville's case of occlusion of the vagina, 1116; case of artificial anus at umbilicus, 1116; Mr. Farr's case of dissecting aneurism of thoracic aorta, 1116; Dr. Renaud's case of soft cancer of ovaries, 1117.
- Mannite, fulminating, 259.
- Manchester Medico-Ethical Association, meeting of the, 861.
- Marsh, Mr. pension to the widow of, 951.
- Marsh, Sir H. defection of, from the cause of Irish medical practitioners, 896.
- Marsh's, Mr. Lory, case of palsy of the heart, 1035.
- Matteucci's, Professor, lectures on the physical phenomena of living beings, reviewed, 985.
- Medical trials and inquests:—Report on a case of poisoning by arsenic, 124; case of poisoning by prussic acid, 171; trial for murder by poisoning with arsenic, 555; trial of a student for the forgery of a certificate of the Apothecaries' society, 995; expenses of coroners, and fees at inquests—Reg. v. the Justices of Carmarthenshire, 1040; results of an Excise information for selling sweet spirits of nitre, 1040; fees to medical men at coroners' inquests—Synnot v. Mills, 1080; action for the loss of an eye—Keeley v. O'Connell, 1080; action respecting the sale of medical practices, 1149.
- Medical Society of London, papers read at the:—Dr. Clutterback on the prevalent fever, 686; Dr. Marshall Hall on epilepsy, 854; Mr. Ward's case of abscess of the tongue, 855; Mr. Pilcher on brain disease in connexion with disease of the ear, 1078; Dr. Cogswell's history of chloroform, 1079.
- Medical officers of poor-law unions, duties and responsibilities of the, 40; remarks on the present state of the, 818; increased salaries to, 951; questions addressed to, 963.
- Medical attendance under the English poor law, editorial observations on, 28.

- Medical legislation, little attention bestowed on, 997.
- Medical convention, and poor-law union salaries, editorial remarks on the, 811.
- Medical appointments at the General Dispensary, Aldersgate Street, 564.
- Medical attendants of prisons, status of the, 437.
- Medical relief to the poor, editorial observations on, 722; suggestions respecting, 949.
- Medical legislation, petitions to Parliament on subjects connected with, 1027.
- Medical registration, report on, 724.
- Medical men as members of the House of Commons, 160; treatment of, by town-councils, 940.
- Medical students, on the duties of, 522.
- Medical students, advice to, 532.
- Medical witnesses' act, remarks on the, and on coroners' fees for analysis, 560.
- Medical witnesses, defence of, by a judge, 337.
- Medical witnesses, and coroners' fees for analysis, 216, 392.
- Medical witnesses, Mr. Synnot on the improper treatment of, at coroners' inquests, 994.
- Medical witnesses' act, editorial observations on an attempt to nullify the, 1062.
- Medical witnesses, exclusion of, from Courts of Assize, during trials, 858.
- Medical reform bill, the French, 65.
- Medical reform in France, editorial observations on, 25, 350; a summary of the French bill, 37.
- Medical registration, appointment of a select committee of the House of Commons on, 1036.
- Medical registration bill, petitions relative to the, 1084.
- Medical practices, a dealer in, 26.
- Medical degrees, sale of, 218.
- Medical ethics, editorial observations on, 894.
- Medical portraits, notice of recent, 1113.
- Medico-ethical association, formation of a, at Manchester, 804.
- Medicus, remarks by, on the comparative mortality of London and Edinburgh, 36.
- Meigs, Dr. on the vitellary nature of the corpus luteum, 51; account by, of two cases of double vagina, 734.
- Memorial to Sir G. Grey from the Provincial Association, 1150.
- Mercury, metallic, on the action of, on the body, 508.
- Mercurial salivation, peculiarity of, 82; production of, 173.
- Mercury, detection of, in the pus from a bubo, 57.
- Mercer, Dr. on entozoa or worm aneurism, 643.
- Meteorological summary, 44, 88, 132, 176, 220, 264, 308, 352, 396, 438, 480, 522, 564, 604, 648, 692, 736, 780, 822, 866, 910, 954, 998, 1042, 1086, 1130, 1134.
- Microscopical Society, papers read at the:—Mr. Dean on the growth of fungus in the stomata of cactus niger, 81; Mr. Rainey on the structure and formation of the nails of the fingers and toes, 81; Mr. Quekett on the minute arrangement of the capillaries in the respiratory organs of fishes, 81.
- Middlesex hospital, resignations at the, 1084.
- Miracle, a sanitary, 127.
- Miscellaneous medica, by Dr. Dick, 23, 334, 709, 1102, 1137.
- Murphy, Dr. on headache, 1032.
- Mortality of London and Edinburgh, 38.
- Mortality of Irish medical practitioners, remarks on the, 631.
- Mortality in English prisons, 776.
- Morgan, the late Mr. John, obituary of, 778.
- Morley's, Mr. tracts upon health, reviewed, 598.
- Morbid sympathies, Dr. Copland on, 538, 578, 619, 660, 699, 753, 791, 840, 845.
- Mortality, increased, in the metropolis, editorial observations on the, 1110.
- Müller's, M. elements of physics and meteorology, reviewed, 341.
- Murder, alleged, by burning, 516.
- National Medical Institute, letter from the secretary of the, 474.
- Nervous affections, a new cure for, 259.
- Nerve, spinal accessory, functions of the, 348.
- Naval appointments, 517.
- Newport, Mr. pension to, 42.
- Nitrate of silver, Mr. Higginbottom on the use of, in erysipelas, 544.
- Noad, Mr. on the manufacture of sulphuric acid, 34.
- Norfolk Miscellany, notice of the, 472.
- Nourse's, Mr. tables for students, reviewed, 770.
- Nunneley's, Mr. experimental inquiry into the effects of hydrocyanic acid produced upon animal life, 507.
- Nutrition, hypertrophy, and atrophy, Professor Paget's lectures on:—
LECT. 3.—Fourth condition essential to healthy nutrition, namely, a healthy state of the part to be nourished; precision of the assimilative process in diseased as well as in healthy parts; tendency of altered blood and tissues to revert to the perfect state; exactness of assimilation applied in explanation of the connection between the immaterial mind and the brain.—Nature of the process of assimilation; formative portion of the assimilative process probably always one of development; difference between nutritive reproduction and nutritive repetition.—Second variety of the formative process, namely, growth; amount of this addition proportioned to the requirements of the part; "reserve power" in tissues by which this is effected; besides growing in hypertrophy, parts may, on an emer-

gency, be developed into higher forms of tissue; the conditions essential to healthy nutrition equally or more necessary in hypertrophy, 52.

LACR. 4.—Hypertrophy; its two kinds; the three principal conditions which give rise to it; cases and preparations illustrating the influence of these conditions; John Hunter's experiment of transplanting the spurs of cocks; specimens exhibiting hypertrophy in the different tissues; hypertrophy in consequence of the too irritable action of a muscle.—Hypertrophy of bone; eccentric and concentric hypertrophy of the skull; hypertrophy of other bones as a morbid process rare.—Specimens illustrating the effects of pressure according as it is from without or from within, or constant or occasional; presence of cutaneous structures in the contents of ovarian cysts, 95.

LACR. 5.—Atrophy; degeneration of tissue into fat; probably always the result of atrophy; senile atrophy as exhibited in the two classes of old persons, the fat and the lean; gradual disappearance of the nucleus coincident with the fatty degeneration of a fibre or cell; importance of the nuclei in the formative process; fat an organic substance of the lowest order; John Hunter's views of it; General conclusions respecting atrophy with fatty degeneration.—Conditions leading to the occurrence of atrophy; in some cases occurs spontaneously; most common seat of this form of atrophy; no necessary connection between the fatty degeneration of an organ and general obesity; fat formed within a tissue constitutes disease, 143.

LACR. 6.—Atrophy as manifested in the principal organs and tissues; atrophy of muscle; varieties presented by the degenerated fibre, and by the cellular tissue between them; experiments of Dr. Reid; suggestions founded thereon for the treatment of paralysed muscles; spontaneous atrophy of muscle; atrophy of the heart; cases.—Atrophy of bone; mollities ossium; rickets of adults; relation between fatty degeneration of bone and rickets of early life.—Fatty degeneration of the liver; relation in which the functions of the liver stand to those of the lungs, 227.

Obituary notices :—Mr. Edw. J. Quekett, 42; Dr. G. J. Bell, 42; Mr. J. Curtis, 87; M. Pariset, 128; M. C. Broussais, 128; Mr. W. H. Lerew, 128; Dr. Ronalds, 175; Mr. Mayberry, 175; Dr. Tobin, 175; M. Texier, 218; M. Wollowski, 218; Mr. Mickley, 218; Dr. A. Clark, 218; Dr. Andrew Combe, 307; Mr. Foster, 307; Mr. Kearsley, 307; Mr. Bunn, 307; Dr. Beard, 476; Mr. Dermott, 518; Dr. Trinchinetti, 564; Dr. Carran, 641; Mr. Storrs, 642; Mr.

Morgan, 642; Dr. Bell, 688; Dr. Hardwick, 689; Dr. Miquel, 775; Dr. Valentine Flood, 822; Dr. Richardson, 865; Dr. Solomon, 907; Mr. Brown, 907; Mr. Bailey, 907; Mr. Enosy, Jun. 907; Mr. Toulmin, 907; Mr. Dyer, 907; M. Diefenbach, 907, 997; M. le Doct. Nichet, 907; Dr. Carruthers, of Dundee, 997; Mr. Raller, 998; Mr. Scrope Hutchinson, 998; Dr. W. Wilson, 998; Dr. Harivel, 1041; Prof. Damas, 1041; Dr. Campbell, 1041; Mr. Liston, 1041; Dr. Wigan, 1086; Dr. Holme, 1086; Dr. Hamilton, 1123; Mr. King, 1123.

Obturator hernia, Mr. Hill on, 549.

Oesterlein, Professor, on the entrance of insoluble substances from the intestinal canal into the blood-vessels, 42.

Ophthalmic surgery, Mr. Bowman's lectures on, 744, 826.

Opium, cases of poisoning by, successfully treated, 131.

Opiates, Dr. Sharkey on the treatment of peritonitis by, 23.

Orfila, M. and Baron Berzelius, honours conferred on, by the King of the Belgians, 261.

Ovum, on the structure of the, 371.

Ovariectomy, Mr. Southam on the operation of, 510.

Paget's, Professor, lectures on nutrition, hypertrophy, and atrophy—see Nutrition.

Palsy of the heart, Mr. Lory Marsh's case of, 1035.

Pappenheim and Vogt, MM. on the structure of the ovum, 371.

Pariset, M. pension to the widow of, 190.

Parkin, Dr. on the prevention and treatment of the potato disease, 212.

Partridge's, Mr. case of fatty degeneration of muscle, 944.

Pariset, M. notice of the death of, 128.

Parturition, fracture of the sternum during, 389.

Pathological Society of London, proceedings of the :—Dr. Hughes' case of perforating ulcer of the stomach, 770; Dr. Ogier Ward's specimen of digestion of the stomach after death, 770; Dr. Peacock's case of malformation of the heart, 771; Dr. Williams' case of extensive hypertrophy and dilatation of the heart, 773; Dr. Peacock's case of malignant disease of the fore-arm, 773; Mr. Birkett's case of strumous disease of the testicle, 774; Mr. Nathaniel Ward's case of stricture of the œsophagus, 774; Mr. Prescott Hewett's three cases of ulceration of the duodenum in burns, 849; Mr. Crisp's case of polypus of the uterus, 850; Mr. Lever's case, 850; Dr. Ramsbotham's case of hypertrophied placenta, 851; Mr. Avery's case of tumor of the lower jaw, 851; Mr. Critchett's case of tumor of the lower abdominal parietes, 853; Dr. Golding Bird's case of aortic aneurism, 853; Dr.

- Risdon Bennett's case of disease of the agminate and solitary glands of the ileum, 863; Mr. Partridge's case of fatty degeneration of muscle, 944; Dr. Peacock on an open state of the ductus arteriosus, 944; on a case of ulcerated aperture between the gall-bladder and the duodenum, 945; Dr. Williams' case of disease and rupture of the mitral valve, 946; on a case of rupture of aortic valves, 946; of cerebral hæmorrhage, 946; Mr. Crisp on serous cysts, 946; Mr. Ward's case of hydatid of the heart, 947; Dr. Quain's case of partial contraction of the abdominal aorta, 947; Dr. Fuller's case of disease of the aortic valves, 947; Mr. Hawkins on a peculiar form of subcutaneous tumor, 949; Dr. Lloyd's case of malignant disease of the cæcum, 949; of ulceration of the intestines, 949; Mr. Hewett's case of fracture of the cricoid cartilage, 1070; Dr. Handfield Jones on a case of dysentery, 1070; Mr. Cock's case of rupture of the kidney, 1071; Mr. Walton's case of tumor of the neck, 1072; Mr. Birkett's cases of constriction of the ileum, of double vagina and uterus, and diseased auricle, 1072; Mr. Avery's case of aneurism of the aorta, 1072; Dr. Coley's cases of tumor of the spleen, and of ulceration of the glottis, 1074; Dr. Lloyd on strumous disease of the kidney, 1074; Mr. Key on gun-shot wound of the elbow and fore-arm, 1144; Mr. Smith's case of disease of the pharynx and larynx, 1145; Dr. Brinton's cases of scrofulous tumors, 1146; Dr. Chevers' case of obliteration of the pulmonary artery, 1147; Mr. Ward's case of aneurism of the aorta, 1147; Mr. Crisp's case of croup, 1148; cases of ulcer of the stomach, 1148; Mr. Brooke's case of malignant disease of the chitoris, 1148.
- Pauper lunatics, number of, in England and Wales, 350.
- Payment of medical men for services during the cholera, 951.
- Peacock, Dr. on an open state of the ductus arteriosus, 994; on a case of ulcerated aperture between the gall-bladder and the duodenum, 945.
- Peacock's, Dr. case of malformation of the heart, 771; case of malignant disease of the forearm, 773.
- Pension, grant of a, to Mr. Newport, 42.
- Pension, grant of a to the widow of the late James Marsh, 951.
- Percival's, Mr. case of disease of the aortic, mitral, and tricuspid valves, in a horse, 691.
- Pereira's, Dr. historical notice of the chloride of formyle, 953.
- Peritonitis, Dr. Sharpey on the treatment of, by opiates, 23.
- Percussion-caps, case of poisoning from swallowing, 630.
- Pharmacy, influence of the excise laws on, 36.
- Phillips, Mr. Benjamin, on the diagnosis and treatment of intestinal obstruction, 899.
- Phlebitis, fatal, of the superior vena cava Dr. Black's case of, 518.
- Physiological problems, 1118.
- Pilcher, Mr. on brain-disease in connection with disease of the ear, 1078.
- Placenta, Dr. Francis Adams on the construction of the, and the mode of communication between the mother and the fetus in utero, 155, 194, 287, 378, 421.
- Plague, alleged presence of the, in the metropolis, 41.
- Plague, ignorance respecting the, 1122.
- Pneumonia, Mr. Hunter's remarks on, 413.
- Poggiale, M. on the composition of the blood of new-born animals, 1129.
- Poisoned bread, 515.
- Poisons, effect of, on animal heat, 217.
- Poisons, restriction of the sale of, in France, 515.
- Poisoning by druggists, 473.
- Poisoning by arsenic, medical evidence in a case of, 257.
- Poisoning by arsenic, cases of, 515.
- Poisoning by arsenic, trial for, 555.
- Poisoning, alleged case of, at Putney, 218.
- Poisoning, secret, remarks on recent cases of, 305.
- Poisoning by a somnambulist, 613.
- Poisoning by iodine, 622.
- Poisoning, case of, from swallowing percussion-caps, 630.
- Pooley's, Mr. Charles, case of spina bifida, 807.
- Poor-law medical officers, convention of, 776.
- Poor-law medical officers, increased salaries of, 951.
- Pregnancy, death from vomiting during, 476.
- Prescribing in newspapers, example of the dangers attending, 687.
- Prisons, English, mortality in, 776.
- Profession, editorial remarks on the state of the, in Ireland, 761.
- Prohibition of the sale of arsenic, 602.
- Prostate gland, Mr. C. H. Jones on the origin and growth of certain concretions occurring in the, 328.
- Prostatic calculus, Dr. T. H. Barker on a case of, 512.
- Provincial medical practices, trafficking in, 39.
- Provincial Medical and Surgical Association, anniversary meeting of the, 305.
- Prussic acid, case of poisoning by, 171.
- Prussic acid vapour, alleged death from, 859.
- Public health in the metropolis, editorial remarks on the state of the, 1023.
- Puerperal fever, Dr. Clark's cases of, with observations, 331.
- Pulmonary artery, Dr. Chevers's collection of facts illustrative of the morbid conditions of the, 753, 835, 1011, 1098.
- Pursuits, scientific, wide range of, 521.

- Quarantine congress, 85.
 Quain's, Dr. case of partial contraction of the abdominal aorta, 947.
 Queen's College, Birmingham, annual meeting of, 474.
 Questions addressed to medical officers of poor-law unions, 963.
 Quekett, Mr. Edward John, notice of the death of, 42.
 Quekett, Mr. on the minute arrangement of the capillaries in the respiratory organs of fishes, 81.
 Rainey, Mr. on the structure and formation of the nails of the fingers and toes, 81.
 Ramsbotham's, Dr. case of hypertrophied placenta, 851.
 Rankin's, Dr. retrospective address, notice of, 512.
 Rape, alleged, perpetrated on a female while under the influence of ether, 259.
 Rees's, Dr. G. Owen, lectures on albuminuria—see Albuminuria, Dr. G. Owen Rees's lectures on.
 Rees's, Dr. G. O. case of ascites and obstinate vomiting from scirrhus of the stomach, 65.
 Rees's, Dr. G. O. on albuminuria, or the morbus Brightii, 182.
 Regulation of druggists in Turkey, 603.
 Registration returns of the causes of death, defects in the, 1082.
 Reid's, Dr. Robert, alveolar hæmorrhage compress, report of the committee of the Royal Scottish Society of Arts, 1040.
 Remuneration of medical officers of poor-law unions, remarks on the, 174; reply of the lord lieutenant to the petition of the Irish medical practitioners, 174.
 Remuneration of Irish medical practitioners in fever cases, editorial remarks on the, 204.
 Remuneration, insufficient, of Irish medical practitioners, 27.
 Remington's, Mr. case of difficult parturition, 902.
 Renaud's, Dr. case of carcinoma of the neck of the uterus, 301.
 Renaud's, Dr. case of dysentery, 857.
 Renaud's, Dr. case of tubercle in the testicle of a child two years of age, 992.
 Report of the proceedings of the Pathological Society of London, review of the, 731.
 Reviews:—Dr. Kennedy on the connexion between famine and fever in Ireland, 29; Dr. Todd and Mr. Bowman's physiological anatomy, 31; Dr. Hume on the learned societies, 78; Dr. King on the preservation of infants in delivery, 79; Dr. Steward on dyspepsia, 80; Rev. T. Gisborne on the duties of physicians, 80; Guy's Hospital Reports, second series, vol. iv. 119; Mr. Hassall's microscopic anatomy of the human body, 164; Chelius's system of surgery, 208, 725; Dr. Parkin on the prevention and treatment of the disease in the potato, 112; digest of the evidence before the House of Commons on the Andover Union, 213; Mr. Swan on the nature and functions of the sympathetic nerves, 256; Gray's supplement to the pharmacopœia, 299; Civiale's treatise on lithotripsy, 300; Müller's elements of physics, 341; Dr. White on the Plague, 342; Dr. Crisp on the structure, diseases, and injuries of the blood-vessels, 387; Mr. Lonsdale on lateral curvature of the spine, 435; Mr. Macilwain on vivisection, 471; Norfolk miscellany, 472; Transactions of the Provincial Medical and Surgical Association, 507; Dr. Robertson's guide to the use of the Buxton waters, 553; Mr. Harvey on the diseases of the human ear, 554; Mr. Morley's tracts upon health, 593; the Dublin dissector, 634; Mr. Sibson on the mechanism of respiration, 635; Mr. Solly on the human brain, 681; Mr. Guthrie on wounds and injuries of the abdomen and pelvis, 684; Mr. Lee on hydropathy and homœopathy, 686; Dr. Searle on cholera, 728; report of the proceedings of the Pathological Society of London, 731; Mr. Vincent's observations on some of the parts of surgical practice, 766; Mr. Nourse's tables for students, 770; Dr. Turner's elements of chemistry, 770; Dr. Snow on the inhalation of the vapour of ether, 812; reply of the reviewer to a note from Dr. Snow, 898; Dr. Beck on the adulteration of various substances used in medicine and the arts, 848; Mr. Erasmus Wilson on ringworm, 896; Dr. Sutherland's journal of public health, 899; Messrs. Wells and Warren on the discovery of the application of ether, 941; Matteucci on the physical phenomena of living beings, 985; Mr. Yearsley on deafness, 1027; M. Lallemand on the causes, symptoms, and treatment of spermatorrhœa, 1029; Mr. Erasmus Wilson's portraits of diseases of the skin, 1030; Dr. Arnott on indigestion, 1063; Dr. Todd's cyclopædia of anatomy and physiology, 1064; medical portraits, 1113; health of towns' magazine, 1114; Dr. Hodgkin on medical reform, 1114; Mr. Mortimer on anæsthetic agents, 1114; Dr. Stokes's address on the opening of Meath Hospital for the Session 1847-8, 1114; speech of the Count de Montalembert on medical reform, 1115; Mr. Fownes' manual of elementary chemistry, 1144.
 Rice, the nutritious properties of, exaggerated, 186.
 Robertson's, Dr. guide to the use of the Buxton waters, reviewed, 553.
 Robinson, Dr. G. on the nature and principles of treatment of inflammation, 150, 417.
 Ross's, Dr. James, case of multilocular purulent cyst attached to the concave surface of the liver, 190.

- Ross's, Dr. James, case of exanthematous typhus, 193.
- Rowland, Dr. on epidemic scarlet fever in the metropolis, 1056.
- Roux, Dr. on the application of ether in midwifery, 677.
- Royal College of Chemistry, papers read at the:—Mr. Noad on the manufacture of sulphuric acid, 34; Mr. Alfred Taylor on the Daguerreotype, 33.
- Royal College of Physicians, election of fellows at the, 217.
- Royal College of Surgeons, lists of gentlemen admitted members of the, 42, 86, 128, 174, 318, 306, 340, 350, 393, 438, 654, 777, 937, 997, 1041, 1086, 1154.
- Royal College of Surgeons, election of members of council, 85.
- Royal College of Surgeons, election of president and vice-president at the, 126.
- Royal College of Surgeons, correspondence on the proposed new charter of the, 214.
- Royal College of Surgeons, editorial remarks on the correspondence respecting the supplemental charter to the, 252.
- Royal Medical and Chirurgical Society, papers read at the:—Dr. George Johnson on inflammatory diseases of the kidney, 33; Mr. Simon on subacute inflammation of the kidney, 33; Dr. Arrowsmith's fatal case of dysphagia, 165; Mr. Worthington's case in which a large pouch was formed in the œsophagus, 166; Dr. Todd on the state of the nervous system in paralysed limbs, 167; Mr. Guthrie on a peculiar injury of the upper end of the humerus, 168; Mr. Birkett's account of the structure of a nevus, 168; Dr. Chowne on the source of hæmorrhage in partial separation of the placenta, 168; Mr. Benjamin Phillips on the diagnosis and treatment of intestinal obstruction dependent on internal mechanical causes, 899; Mr. Fergus's case of extensive laceration of the liver, 1068; Mr. Arnott's case of malignant tumor of the os uteri, 1068.
- Royal Society, list of the office-bearers for the ensuing year, 979.
- Rumex acetosa, Mr. Hanks on the injurious effects of, 69.
- Salaries of medical officers of poor-law districts, inadequacy of the, 731.
- Salaries of medical officers of poor-law districts, editorial remarks on the inadequacy of the, 205.
- Salaries of poor-law medical officers, resolutions relative to the, 640.
- Salts of silver, on removing from linen stains produced by the, 514.
- Sanitary legislation for the metropolis, 515.
- Sanitary measures in North Shields, editorial observations on the neglect of, 845.
- Sanitary measures at Gloucester, memorial respecting, from the physicians and surgeons, 864.
- Sanitary commission, editorial remarks on, with reference to the drainage of the metropolis, 549.
- Sanitary legislation, announcement of the House of Commons respecting, 996.
- Sarcomatous tumor of the neck, Mr. Henry Smith's case of, 975.
- Scarlet fever, Dr. Rowland on, 1056.
- Schaffner, Dr. on the development of primitive nerve-fibres, 909.
- Scirrhus of the stomach, Dr. G. O. Rees's case of ascites and obstinate vomiting from, 65.
- Scott, Dr. and Dr. Reamer's case of extra-peritoneal dropsy, 907.
- Scotch epidemic fever of 1844-5, Dr. Wardell on the, 105, 198, 462, 500, 668, 714, 1019.
- Scrofula, Dr. King on the signs, causes, and effects of, 803, 890, 1015.
- Searle, Dr. on cholera, dysentery, &c. reviewed, 728.
- Serum in health, Dr. Day on the physiological characters of the, 378.
- Sexes, proportions of the, in populations, 1123.
- Sharkey, Dr. on the treatment of peritonitis by opiates, 23.
- Sibson, Mr. on the mechanism of respiration, reviewed, 681.
- Simpson, Professor, notice of the discovery by, of a substitute for ether vapour, 906.
- Simpson's, Professor, account of the discovery of a new anæsthetic agent, more efficient than sulphuric ether, 934.
- Simon, Mr. on subacute inflammation of the kidney, 33.
- Small-pox in sheep, notice of the appearance of, 603.
- Small-pox hospital, proposed removal of the, 126.
- Small-pox, period of life most liable to, 498.
- Smith's, Dr. T. cases and remarks on the inhalation of ether, 589, 673.
- Smith's, Mr. Henry, case of sarcomatous tumor of the neck, 975.
- Snow, Dr. on the inhalation of the vapour of ether, reviewed, 812; note in reply to the reviewer, 859.
- Snow, Dr. on chloroform, 1030.
- Society for Relief of Widows and Orphans of Medical Men, election of officers, &c. 766.
- Soltau's, Dr. remarks on delirium tremens, 246.
- Solly, Mr. on the human brain, reviewed, 681.
- Somnambulist, poisoning by a, 613.
- Southam, Mr. on the operation of ovariectomy, 510.
- South London Medical Society, papers read at the:—Mr. Waterworth on neuralgic tetanus, 816; Mr. Remington's case of difficult parturition, 902; Dr. Murphy on certain forms of headache, 1032.
- South London Medical Society, letter from Professor Murphy, 949.

